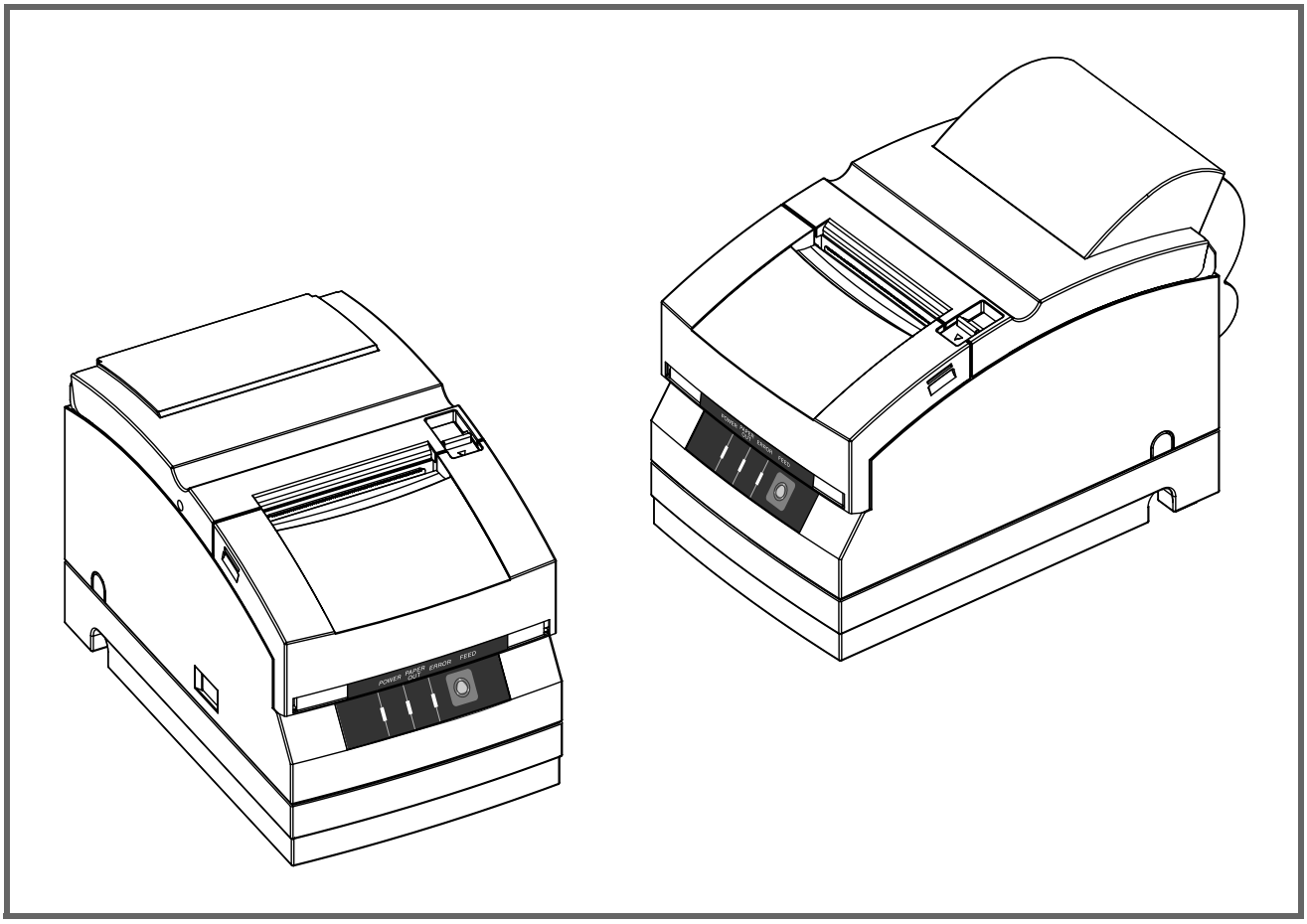
DOT MATRIX PRINTER

CD-S500 Series

Service Manual



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Introduction

This manual is intended for in-field service personnel and explains maintenance procedures for Citizen Dot Matrix Printer CD-S500 series.

Read and understand the contents described in this manual for appropriate maintenance.

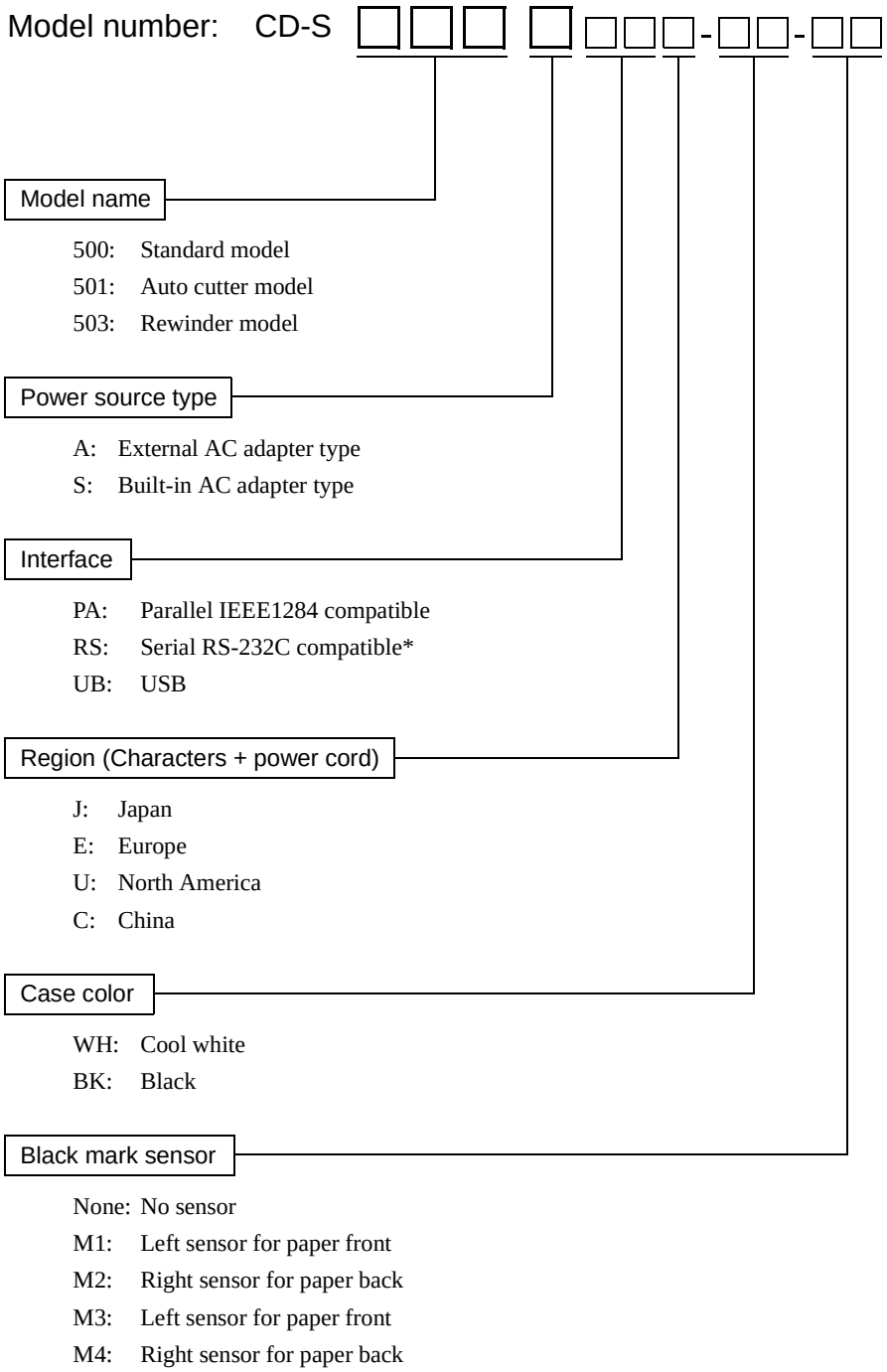
Features

This printer is a dot matrix printer developed for use with various kinds of data communication terminals, POS terminals, and kitchen printers.

- Compact design
- A paper drop-in mechanism that simplifies paper loading
- High-speed printing to a maximum of 240 cps
- Multiple copy printing (original form + 2 copies)
- Input buffer available
- Black mark sensor mechanism
- Versatile printing layout using the page mode
- Logo data or text data prepared by the user can be stored in its user memory
- Built-in drawer kick-out interface
- Optional auto cutter (full cut/partial cut)
- Capacity for paper with widths of 76.2/69.5/57.5 mm
- Serial (RS-232C) or parallel (IEEE and Centronics compliant) interface
- Selection of functions diversified by its operation panel (soft SW setting mode)
- Can be wall-mounted (optional)
- Built-in buzzer
- Built-in or external AC adapter types available
- Two-color printing (red/black)

Explanation of Models

Models in this series are identified by the following model naming method.



* Setscrews for serial interface connectors are available in either inch or metric measurement system depending on the region.

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Chapter 1

SAFETY INSTRUCTIONS

1-1 Conventions for Warning and Caution

The instructions that shall be observed to prevent injury to service personnel and others or damage to the user's property are indicated with the following symbols. The symbols are classified for the degree of possible injury and damage due to incorrect use without following the instructions. Understand the meanings of these symbols before reading this manual.

- Indicates a situation which, if not observed and handled properly, could result in death or serious injury.

- Indicates a situation which, if not observed and handled properly, could result in injury.

1-2 Precautions in Handling

(1) If a paper type other than the recommended paper is used, printing quality or service life may not be guaranteed. Also, be sure to use the paper of the specified width.

(2) Use a ribbon cassette for the CD-S500 series. If any other ribbon cassette is used, some problem, such as print head wire malfunction or poor printing quality, may occur. Do not supply ink to the ink ribbon.

(3) Do not attempt to print without printing paper and a ribbon cassette mounted. Doing so would damage the print head and the platen surface resulting in poor printing quality and shortened service life.

(4) When moving the head, be sure to do so by rotating the gear. Moving the head directly by hand would apply an overload to the carriage pin causing a time lag in printing, etc.

(5) Avoid installing the printer in a place where dust, dirt or metallic particles are present.

(6) Be careful not to attach any foreign matter to the circuit boards.

1-3 Precautions in Storage

(1) Avoid storing the printer in a place where dust or dirt is present or a place of high temperature or humidity.

(2) When storing or transporting the printer, be sure to remove the ribbon cassette. Failure to do so may cause a problem such as poor printing quality.

1-4 Precautions in Maintenance

CAUTION

- When performing disassembly, assembly or adjustment, provide static protection and release static electricity from your body to protect printed circuit boards, etc. from damage due to static electricity.
- When performing disassembly, assembly or adjustment, unplug the power cord of the printer from the service outlet to avoid shock hazards.

Chapter 2

SPECIFICATIONS

2-1 General Specification

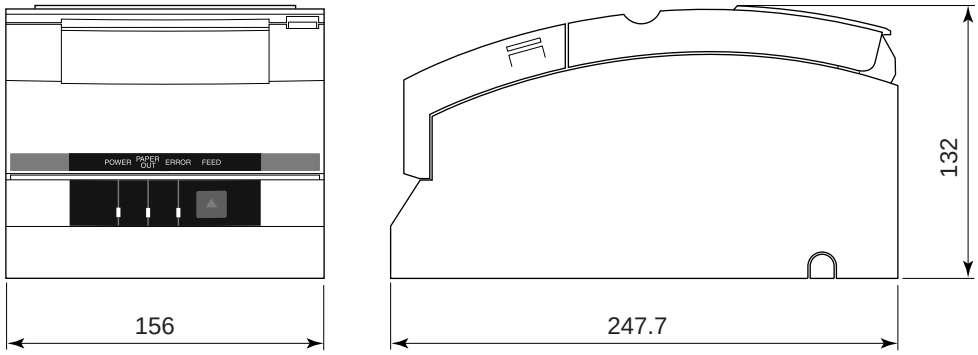
	Item	Function
1.	Printing mode	Serial impact dot matrix
2.	Printing direction	Bi-directional
3.	Head pins	9 pins (ϕ: 0.3mm, Pin interval: 1/72 inch)
4.	Printing line columns	Paper width of 76.2 mm: 40/42 or 33/35 columns Paper width of 69.5 mm: 36/40 or 30/32 columns Paper width of 57.5 mm: 30/33 or 25/27 columns Maximum printing region: 200/400 dots (full dot/including half dot)
5.	Font configuration	ANK 7 × 9 or 9 × 9 dots Chinese 16 × 16 (Compatible only with Chinese spec.) Japanese 16 × 16 (Compatible only with Japanese spec.)
6.	Character types	ASCII (96 characters), international characters, Katakana Code pages: 437, 850, 860, 863, 865, 852, 866, 857, 858, WPC1252 Simplified Chinese GB18030-2000 (Compatible only with Chinese spec.) Japanese JIS (Compatible only with Japanese spec.)
7.	Panel/switch	1 switch (FEED), 3 LEDs (POWER/PAPER OUT/ERROR), 1 buzzer
8.	Printing speed	Printing: 240 CPS (3P paper 200 CPS) Through-put: 76.2 mm wide, 40 columns (7 × 9 + 3sp, 6LPI) 5.0 LPS 69.5 mm wide, 36 columns (7 × 9 + 3sp, 6LPI) 5.4 LPS 57.5 mm wide, 30 columns (7 × 9 + 3sp, 6LPI) 6.0 LPS
9.	Paper feed	Friction feed Minimum pitch: 1/144 inch Paper feed speed: 40 LPS (6LPI)
10.	Paper	Types: 1P roll paper 2P copy roll paper (1 original + 1 copy) 3P copy roll paper (1 original + 2 copies) *When 3P is used, printing speed falls 16%. Paper width: 76.2/69.5/57.5 (±0.5) mm Roll diameter: ϕ30 mm to ϕ83 mm Core diameter: Inner diameter ϕ10 + 2 – 0 mm Outer diameter ϕ27 mm or less Paper thickness: 1P 0.06 to 0.085 mm Copy paper 0.05 to 0.20 mm (total thickness) The total thickness that can be cut is from 0.05 to 0.14 mm. * No glue on the core or end of the paper

	Item	Function
11.	Ribbon	Method: Special ribbon cassette Colors: Single color (purple, black), 2-color (black and red) Life: Purple, approx. 4 million characters (continuous printing at 25°C) Black, approx. 3 million characters (continuous printing at 25°C) Black/red, Black 1.5 million characters, Red 750,000 characters (continuous printing at 25°C)
12.	Interface	Standard: RS-232C or IEEE1284 Option: USB, Ethernet (exchanged with standard I/F)
13.	Emulation	ESC/POS (page mode) CBM mode, STAR mode
14.	Data buffer	Receiving buffer: 40 or 4K bytes NV bit image: 128K bytes User NV memory: 8K
15.	Features	Paper drop-in type Auto cutter function (full cut/partial cut) Rewinder function Black mark sheet compatible Copy (2P/3P) paper compatible DKD (Drawer Kick Driver) function ASB (Auto Status Back) function
16.	Power	AC adapter (Built-in type) Input: 90 VAC - 246 VAC, 50/60 Hz Output: 24 VDC ± 5% Power consumption: 24 W (rating)
17.	External dimensions	Standard: 156 (W) × 247.7 (D) × 132 (H) mm With auto cutter: 156 (W) × 247.7 (D) × 132 (H) mm With auto cutter and rewinder: 156 (W) × 277.7 (D) × 157 (H) mm * Excluding the AC adapter case
18.	Body weight	Standard: 2.20 kg with auto cutter: 2.30 kg with auto cutter + rewinder: 2.45 kg * Excluding the AC adapter, AC adapter case, ribbon cassette and paper
19.	Environmental conditions	During operation: Temperature 0 to 50°C Humidity 10 to 90%RH (no condensation) During storage: Temperature –20 to 70°C Humidity 5 to 90%RH (no condensation)
20.	Durability	Machine reliability: 7.5 million lines (MCBF) Head lifetime: 150 million characters Cutter lifetime: 1 million cuts
21.	Vibration resistance	Frequency: 5-55-5 Hz, Sweep: 20 minutes (full sweep) X/Y/Z direction: 1 hour each, acceleration: 19.6 m/s^2

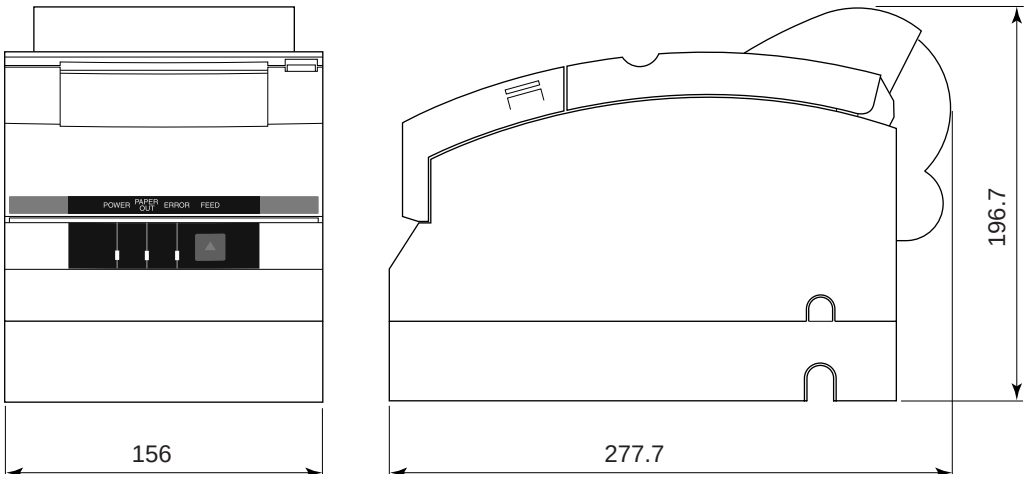
	Item	Function
22.	Shock resistance	When packed: height: 60 cm, direction: 1 corner, 3 edges, 6 faces When unpacked: height: 5 cm, direction: 4 edges, single side support
23.	Electrostatic discharge threshold	Conforms to IEC 61000-4-2, contact discharge: 4 kV, air/indirect discharge: 8 kV
24.	Applicable standards	UL60950-1, CSA C22.2 No.60950-1, FCC Class A, TÜV-GS (EN60950-1), CE Marking Class A, CCC (GB4943, GB9254, GB17625.1), VCCI Class A

2-2 External Dimensions

Standard model



AC adapter case + rewinder model



Chapter 3

DISASSEMBLY, ASSEMBLY AND ADJUSTMENT

3-1 Precautions in Maintenance

CAUTION

- When performing disassembly, assembly or adjustment, provide static protection and release static electricity from your body to protect printed circuit boards, etc. from damage due to static electricity.
- When performing disassembly, assembly or adjustment, unplug the power cord of the printer from the service outlet to avoid shock hazards.

3-2 Service Tools

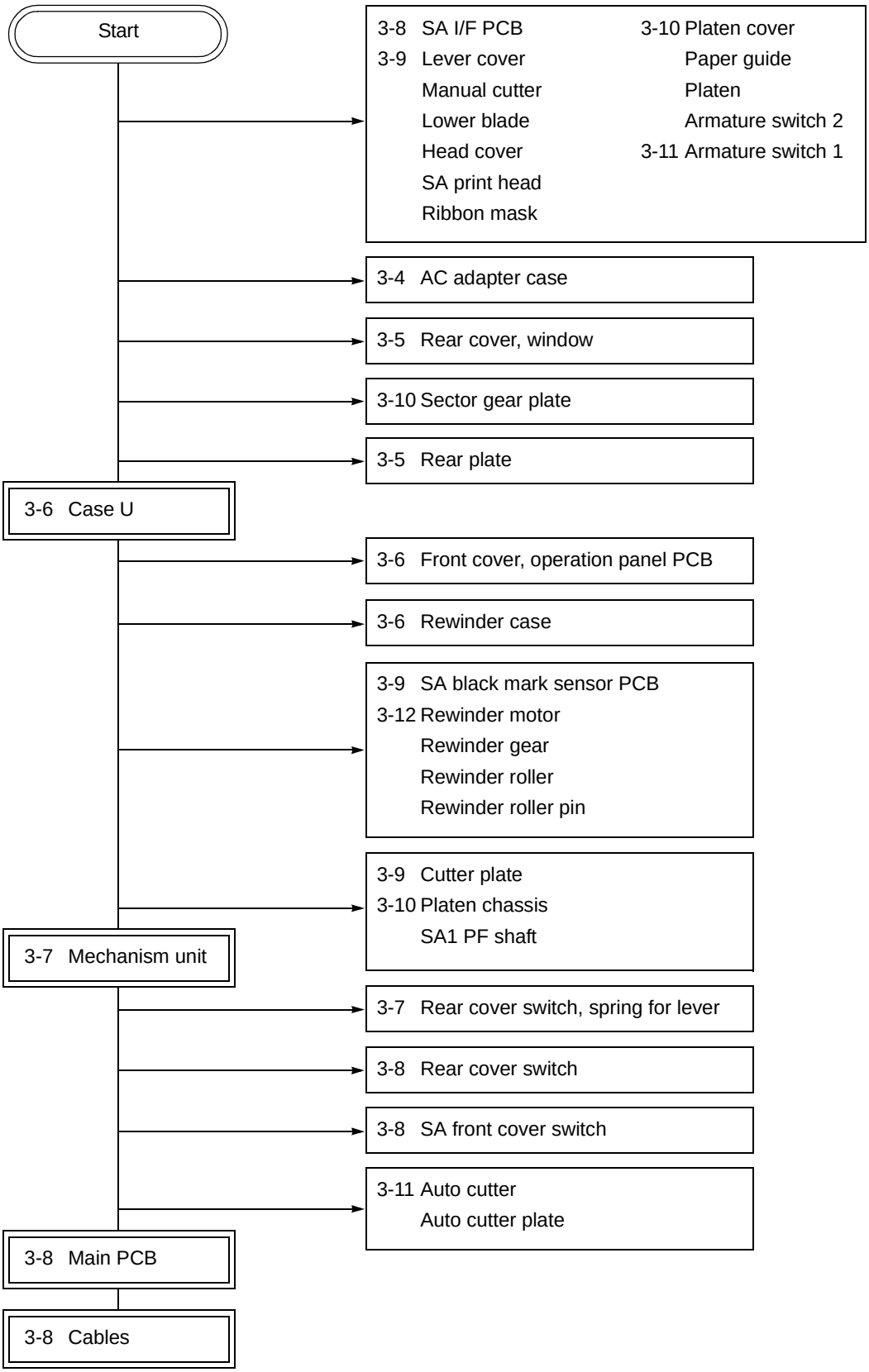
The following service tools are required for replacement of units, etc. in the field.

- Slotted screwdriver (small)
- Phillips screwdriver (M1.7, M2, M3, M4)
- Thickness gauge (t = 0.5 mm, 0.55 mm, 0.6 mm)
- Tweezers
- Long-nose pliers
- Nippers
- Soldering iron
- Multimeter
- Pliers

3-3 Disassembly Flow Diagram

When replacing a part, refer to the disassembly flow diagram shown below.

* "3-x" in the disassembly flow diagram shows the corresponding section number in this manual.

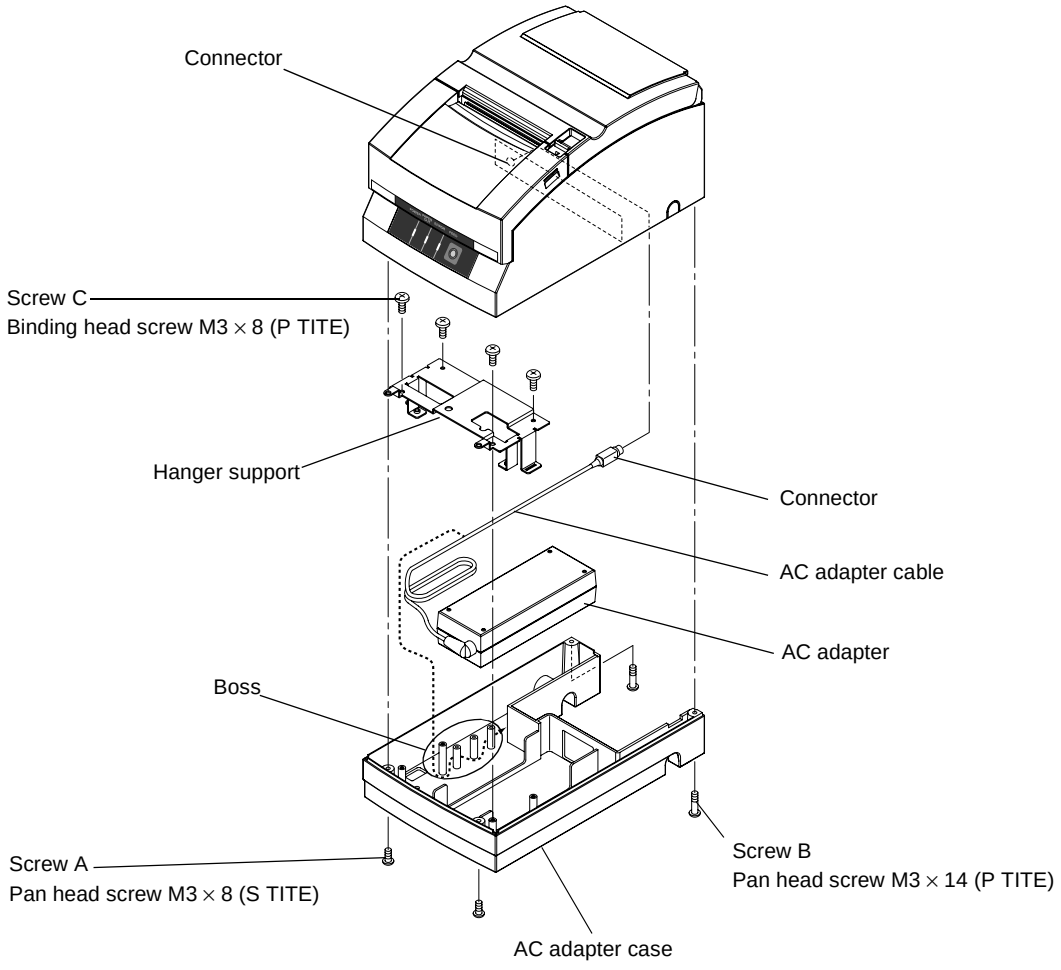


3-4 Disassembly and Assembly of AC Adapter Case (Built-in AC Adapter Type)

The disassembly procedure is explained mainly. When assembling the parts, follow the disassembly procedure in reverse.

♦ Removing the AC Adapter

1) Remove screws A (2 pcs.) and screws B (2 pcs.), and remove the AC adapter case from the chassis.
2) Remove screws C (4 pcs.), and remove the hanger support from the AC adapter case.
3) Remove the AC adapter from the AC adapter case.
4) Pull the AC adapter cable connector out of the connector on the printer.



* The above figure shows the standard model with built-in AC adapter.

♦ Precaution when Mounting the AC Adapter

- When mounting the AC adapter on the AC adapter case, route the AC adapter cable through three bosses in a zigzag pattern in the AC adapter case.

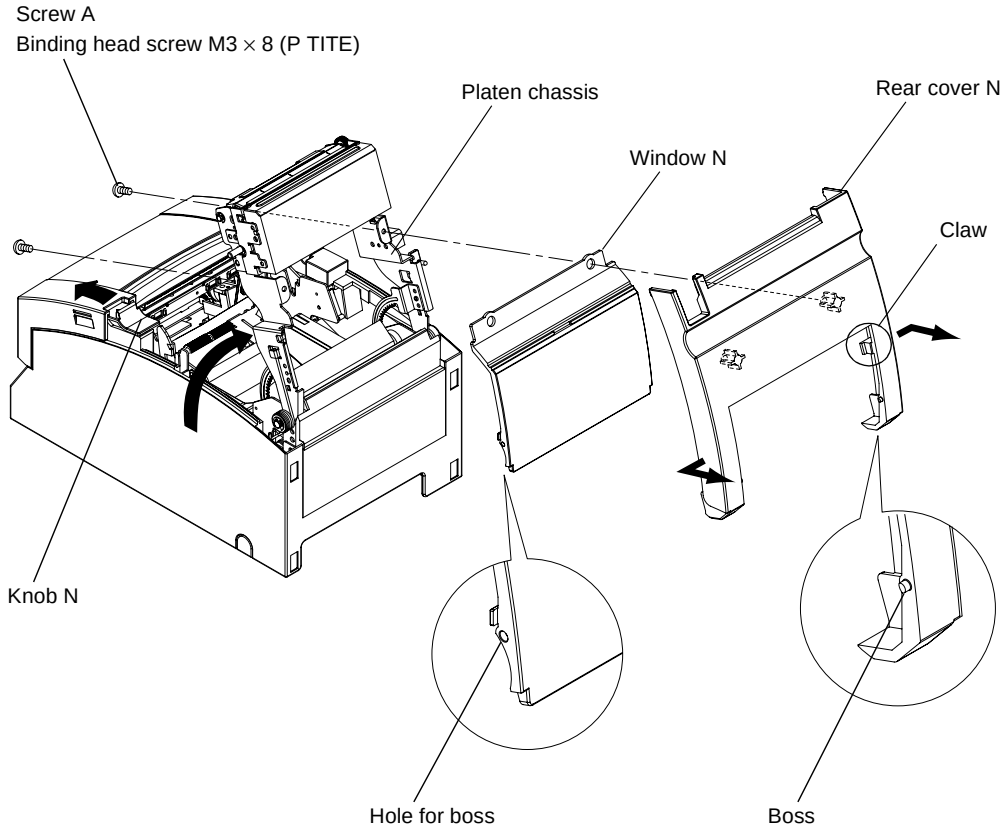
3-5 Disassembly and Assembly of the Rear Cover, Window and Rear Plate

3-5-1 Disassembly and Assembly of Standard Model

The disassembly procedure is explained mainly. When assembling the parts, follow the disassembly procedure in reverse.

♦ Removing Rear Cover N and Window N

1) Slide the knob in the direction of the arrow and open rear cover N.
2) Remove screws A (2 pcs.), and remove rear cover N from the platen chassis.
   * Push the claws at rear cover N outwards when removing rear cover N.
3) Remove window N from rear cover N.



* The above figure shows a standard model.

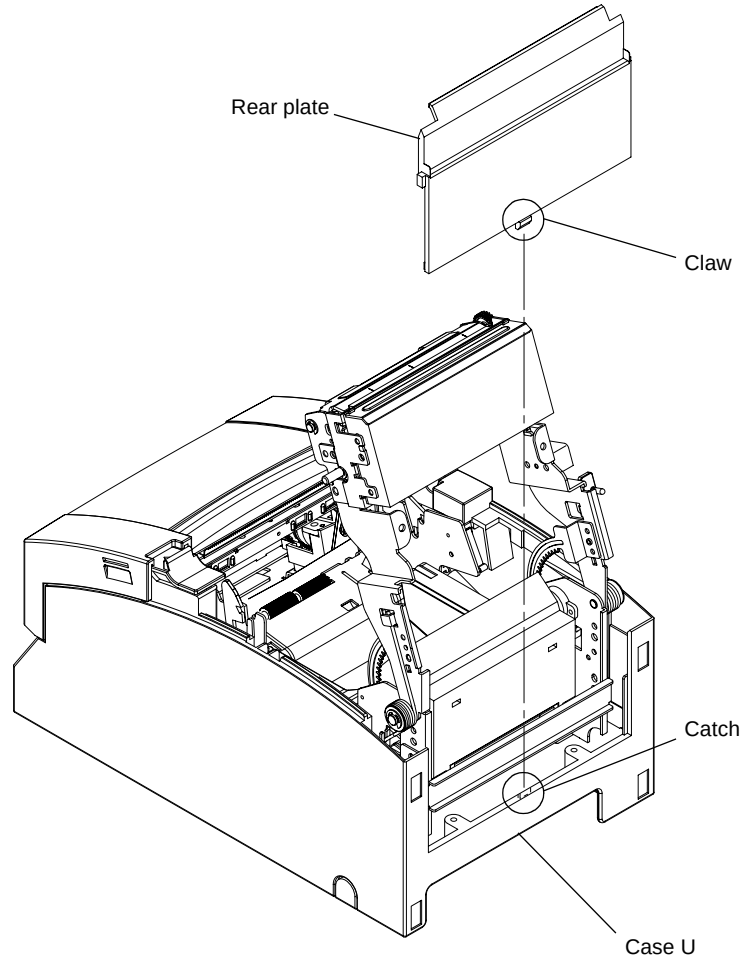
♦ Precaution when Mounting Window N

- When mounting window N on rear cover N, fit the boss on rear cover N into the corresponding hole on window N.

♦ Removing the Rear Plate

1) Remove the rear plate from case U.

   * Unhook the claw at the rear plate from the catch on case U and pull the rear plate upwards.



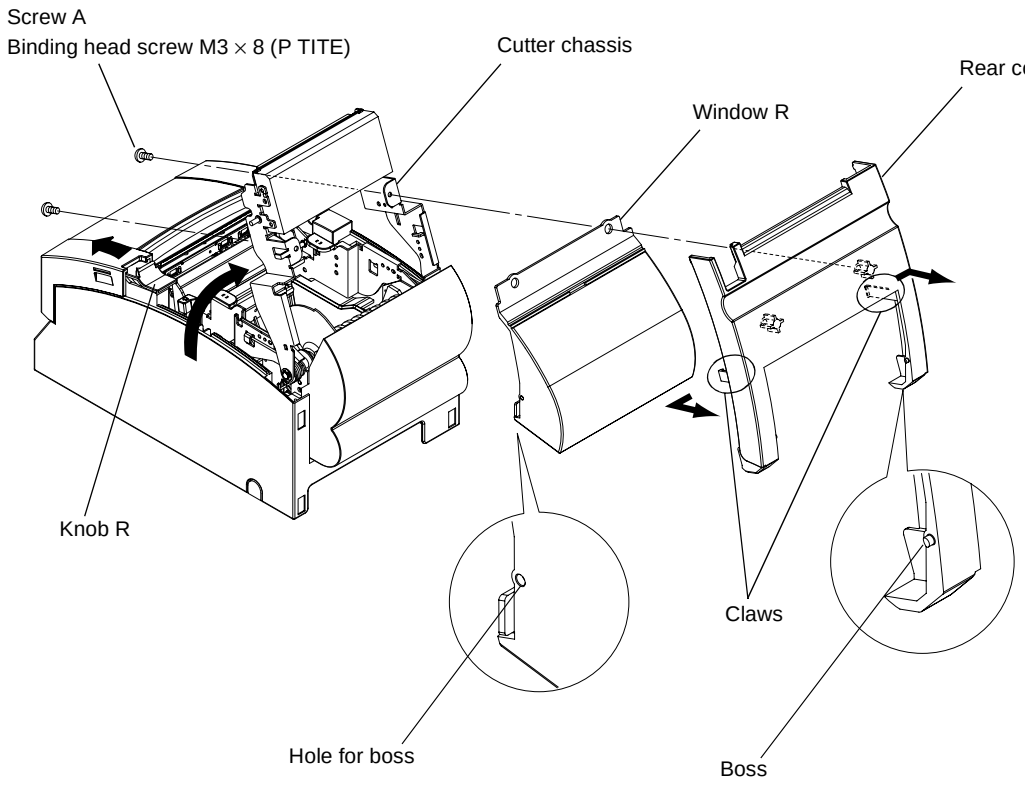
* The above figure shows a standard model.

3-5-2 Disassembly and Assembly of Rewinder Model

The disassembly procedure is explained mainly. When assembling the parts, follow the disassembly procedure in reverse.

♦ Removing Rear Cover R and Window R

1) Slide knob R in the direction of the arrow and open rear cover R.
2) Remove screws A (2 pcs.), and remove rear cover R from the cutter chassis.
   * Push the claws at rear cover R outwards when removing rear cover R.
3) Remove window R from rear cover R.
   * Open the bottom (where the bosses are located) of rear cover R sufficiently when removing rear cover R. If not opened sufficiently, the bosses may scratch the side face of window R.



* The above figure shows a rewinder model.

♦ Precaution when Mounting Window R

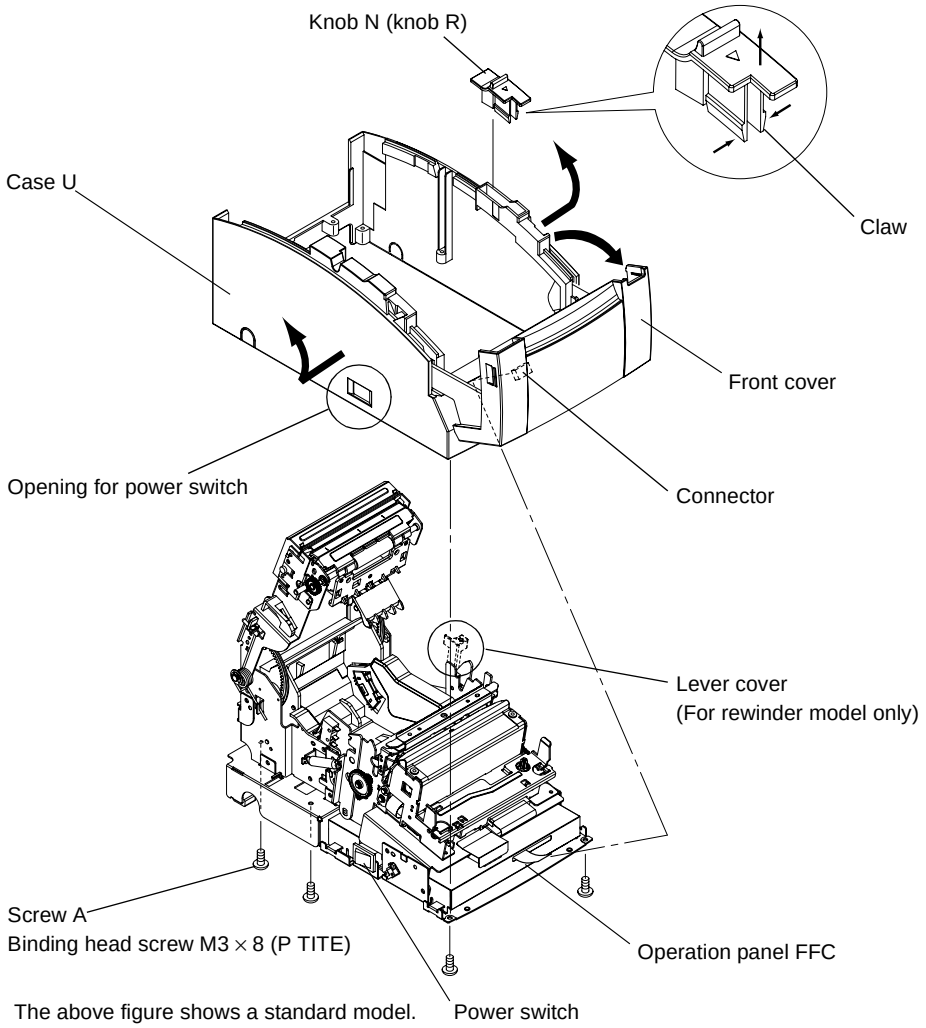
- When mounting window R on rear cover R, fit the bosses on rear cover R into the corresponding holes on window R. Open the bottom (where the bosses are located) of rear cover R sufficiently when mounting rear cover R. If not opened sufficiently, the bosses may scratch the side face of window R.

3-6 Disassembly and Assembly of Case U, Front Cover and Operation Panel PCB

The disassembly procedure is explained mainly. When assembling the parts, follow the disassembly procedure in reverse.

♦ Removing the Lever Cover, Case U and Knob N

1) In the case of rewinder model, remove the lever cover.
   * Pull the lever cover strongly to remove it.
2) Remove screws A (6 pcs.) on the bottom, and remove case U from the body chassis.
   * In the case of standard model, remove case U with the platen chassis and the auto cutter opened; in the case of rewinder model, remove case U with the cutter chassis opened.
   * Open the front cover and pull the sides of case N outwards when removing case U.
   * Widen the opening for the power switch on case U and unhook the power switch.
   * Raise case U a little and pull the operation panel FFC out of the connector.
3) In the case of standard model, remove knob N from case U; in the case of rewinder model, remove knob R from case U.
   * Press the claw at the knob inwards and pull it out upwards.



* The above figure shows a standard model.

♦ Precaution when Mounting Case N

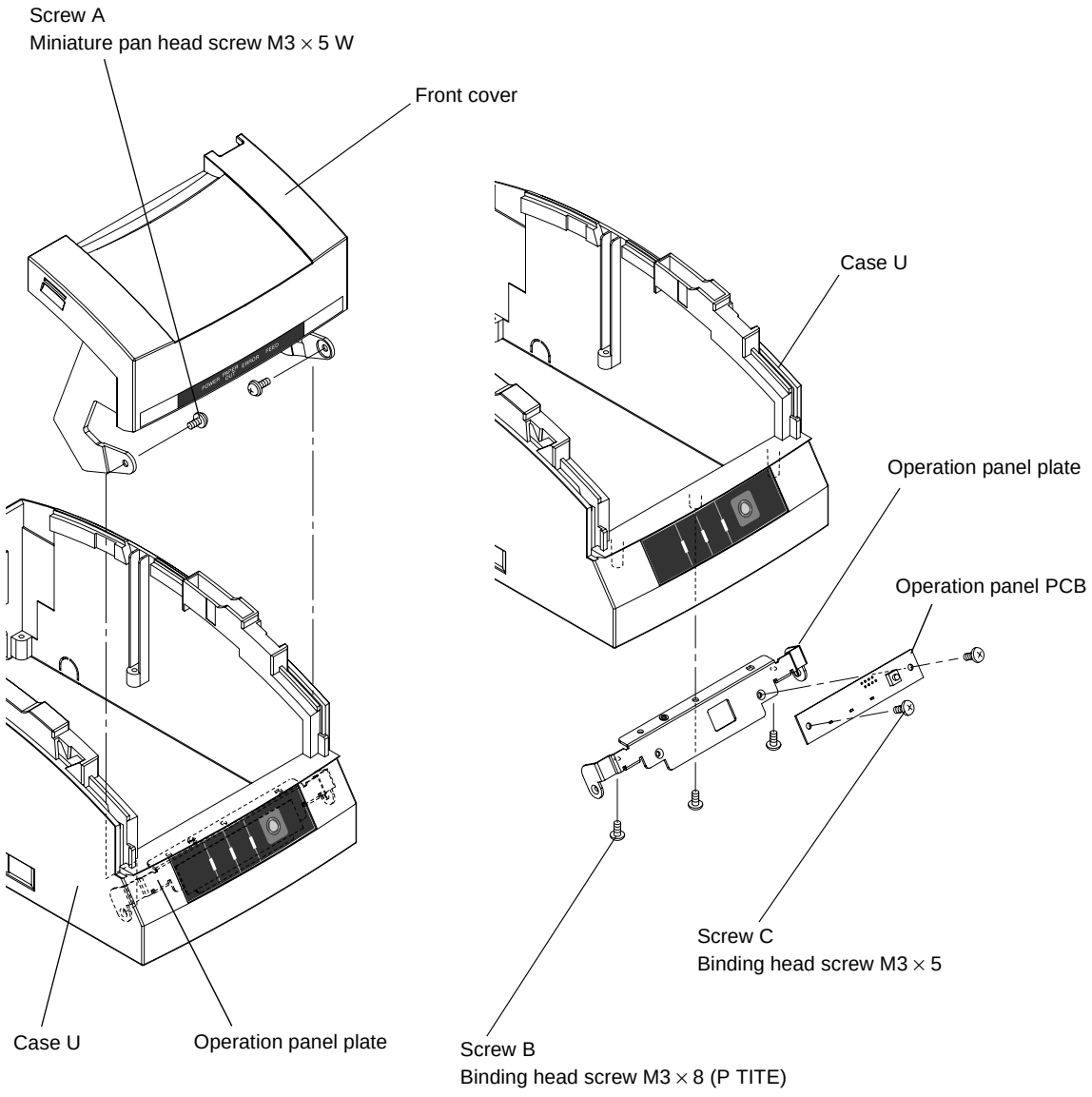
- When case U has been mounted, check that the power switch is turned off.

♦ Removing the Front Cover

1) Remove screws A (2 pcs.), and remove the front cover from case U.

♦ Removing the Operation Panel PCB

1) Remove screws B (3 pcs.), and remove the operation panel plate from case U.
2) Remove screws C (2 pcs.), and remove the operation panel PCB from the operation panel plate.

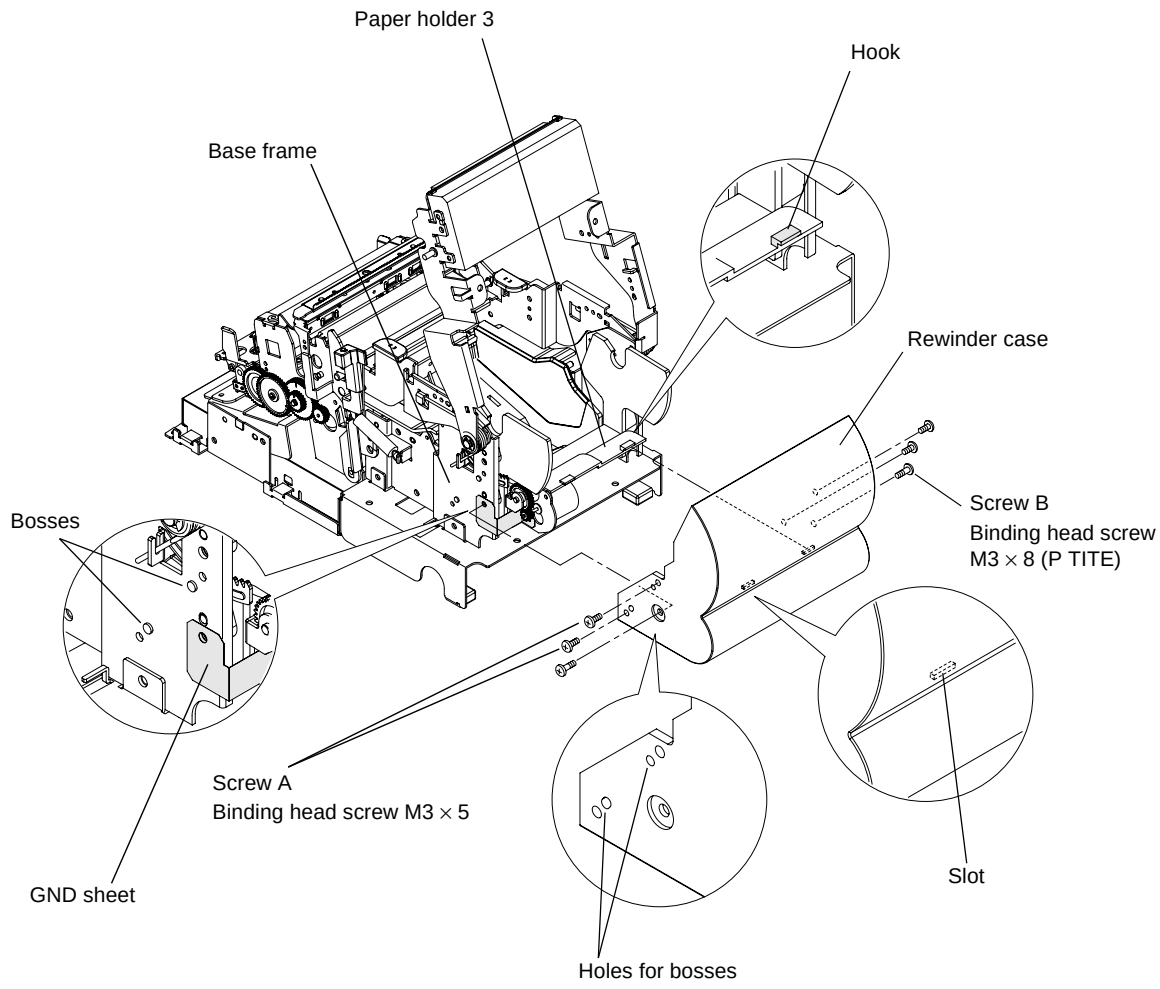


* The above figure shows a standard model.

♦ Removing the Rewinder Case (For Rewinder Model Only)

1) Remove screws A (4 pcs.) and screws B (2 pcs.), and remove the rewinder case from the base frame.

   * Pull the sides of the rewinder case outwards to disengage the bosses for positioning when removing the rewinder case.



* The above figure shows a rewinder model.

♦ Precaution when Mounting the Rewinder Case

- When mounting the rewinder case on the base frame, fit the hook on paper holder 3 into the slot on the rewinder case and fit the bosses into the corresponding holes.
- Tighten the rewinder case together with the GND sheet.

3-7 Disassembly and Assembly of the Mechanism Unit

3-7-1 Disassembly and Assembly of Standard Model

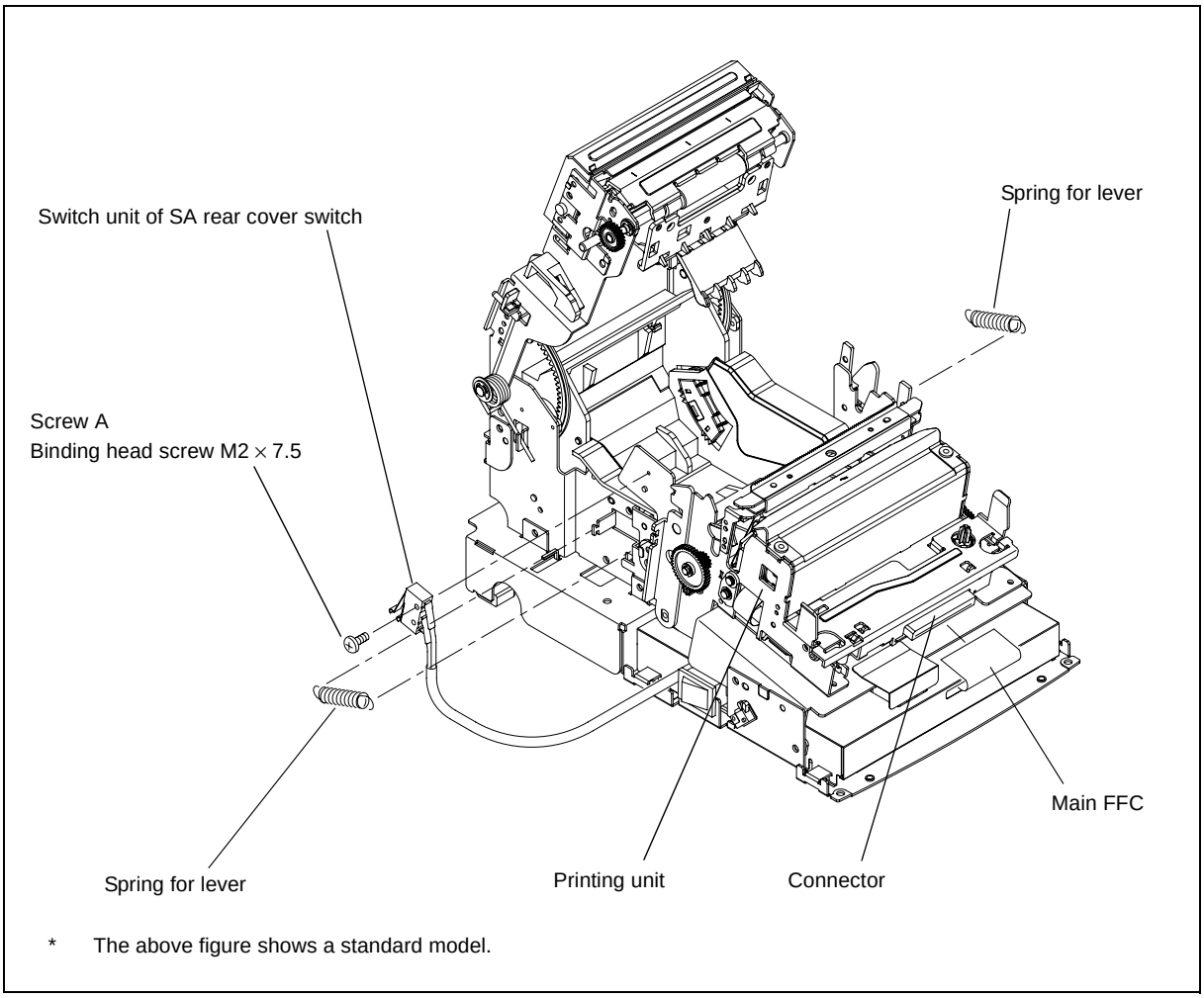
The disassembly procedure is explained mainly. When assembling the parts, follow the disassembly procedure in reverse.

♦ Removing the SA Rear Cover Switch and the Spring for Lever

1) Remove screw A (1 pc.), and remove the switch unit of the SA rear cover switch from the mechanism unit.
   * To remove the SA rear cover switch, disconnect the cable connector of the rear cover switch from the main PCB.

Refer to "3-8 Disassembly and Assembly of the Main PCB Unit" and "♦ Removing the Cables" (Page 3-18).

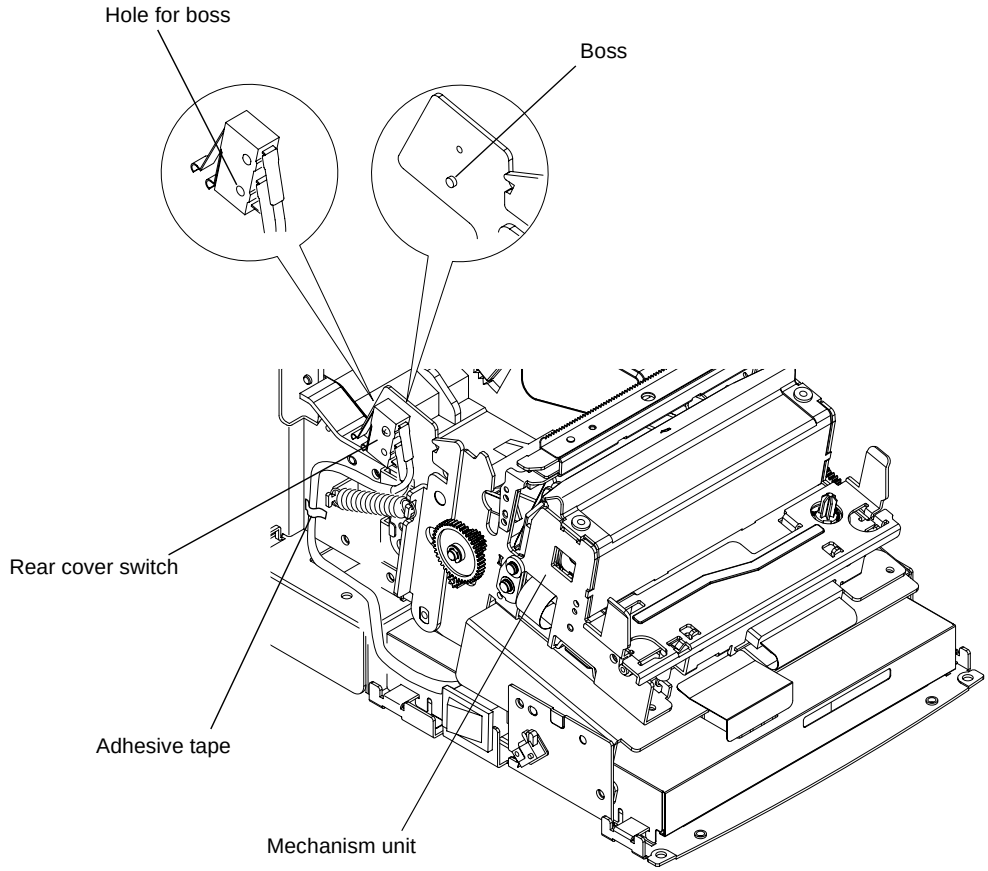
2) Remove the springs (2 pcs.) for the lever.
3) Pull the main FFC out of the connector.



* The above figure shows a standard model.

♦ Precaution when Mounting the Rear Cover Switch

- When mounting the rear cover switch on the mechanism unit, fit the boss into the corresponding hole for positioning.
- Secure the rear cover switch with adhesive tape.

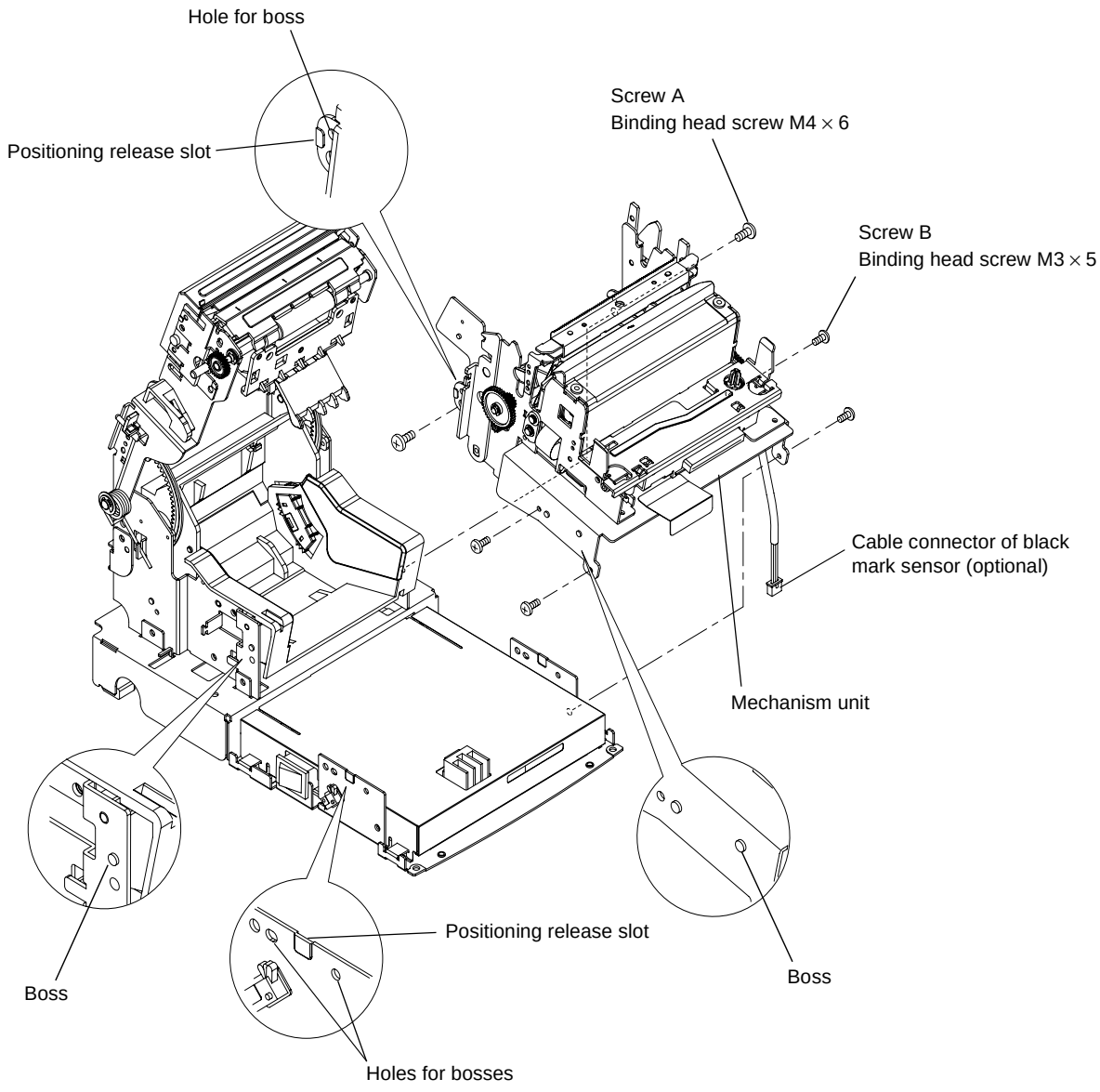


* The above figure shows a standard model.

♦ Removing the Mechanism Unit

1) Remove screws A (2 pcs.) and screws B (4 pcs.), and remove the mechanism unit from the base frame.
   * Use the positioning release slots (4 positions) and disengage the mechanism unit when removing the mechanism unit.
   * If the black mark sensor (optional) is provided, it is necessary to disconnect the cable connector of the black mark sensor from the main PCB.

Refer to "3-8 Disassembly and Assembly of the Main PCB Unit" and "♦ Removing the Cables" (Page 3-18).



* The above figure shows a standard model.

♦ Precaution when Mounting the Mechanism Unit

- When mounting the mechanism unit on the base frame, fit the bosses into the corresponding holes for positioning. When positioning has been completed, attach the springs for the levers, close the platen chassis and tighten screws A and screws B.

* With the rewinder model, close the platen chassis and the cutter chassis and tighten screws A and screws B in order.

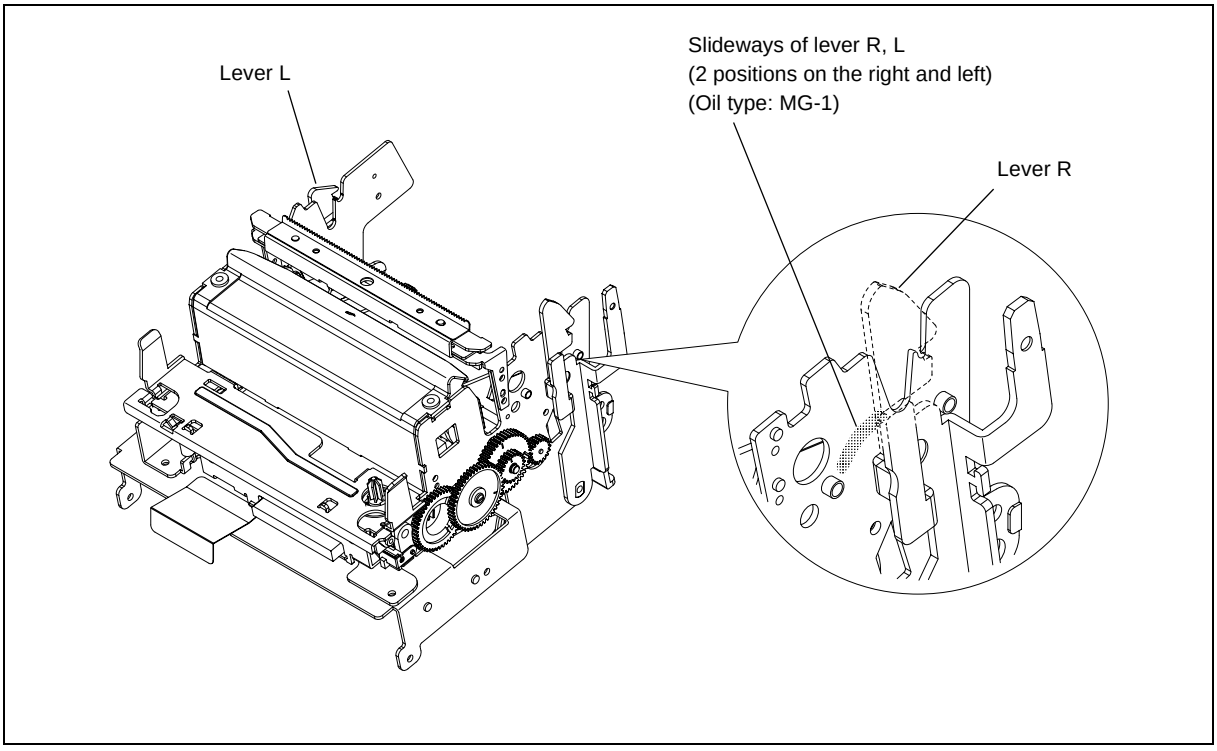
- When the mechanism unit has been mounted, be sure to adjust the head gap.

Refer to “3-15 Adjusting the Head Gap” (Page 3-44).

♦ Oiling to the Mechanism Unit

When maintenance of the mechanism unit has been performed, supply an adequate amount of oil to the positions shown in the figure below. Use the type of oil specified in the figure.

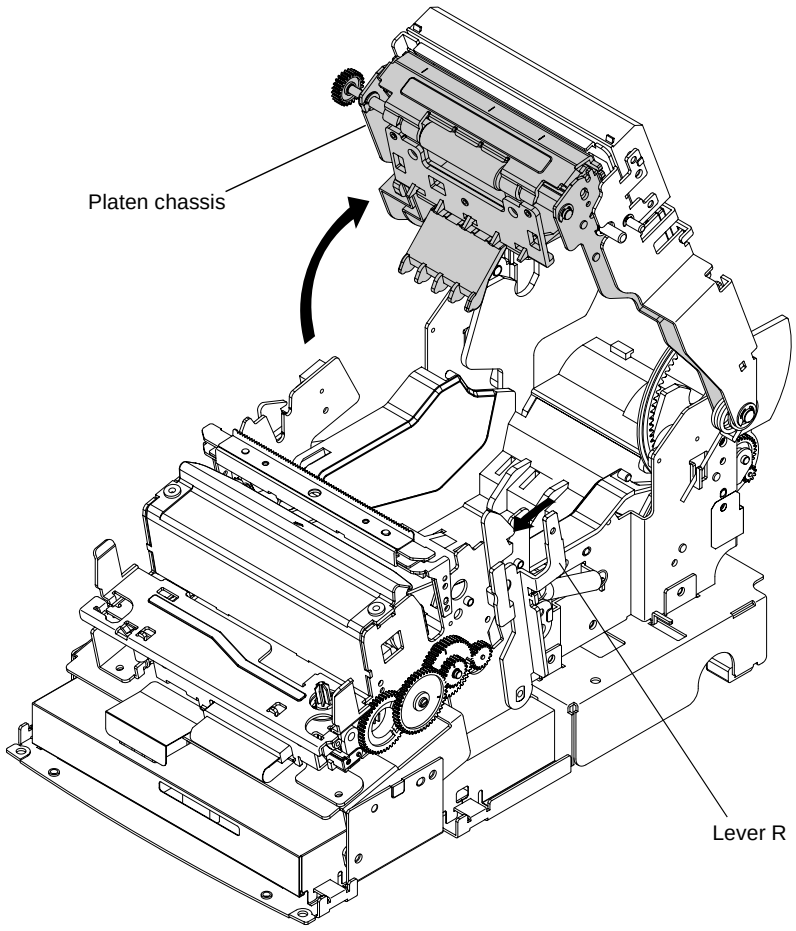
For the oil type, refer to “3-13 Oiling” (Page 3-42).



3-7-2 Disassembly and Assembly of Rewinder Model

* The disassembly and assembly procedures of the mechanism unit for the rewinder model are the same as those for the standard model. If the platen chassis is not opened, operate lever R in the direction of the arrow to keep the platen chassis open during the work.

Refer to “3-7-1 Disassembly and Assembly of Standard Model” (Page 3-10).



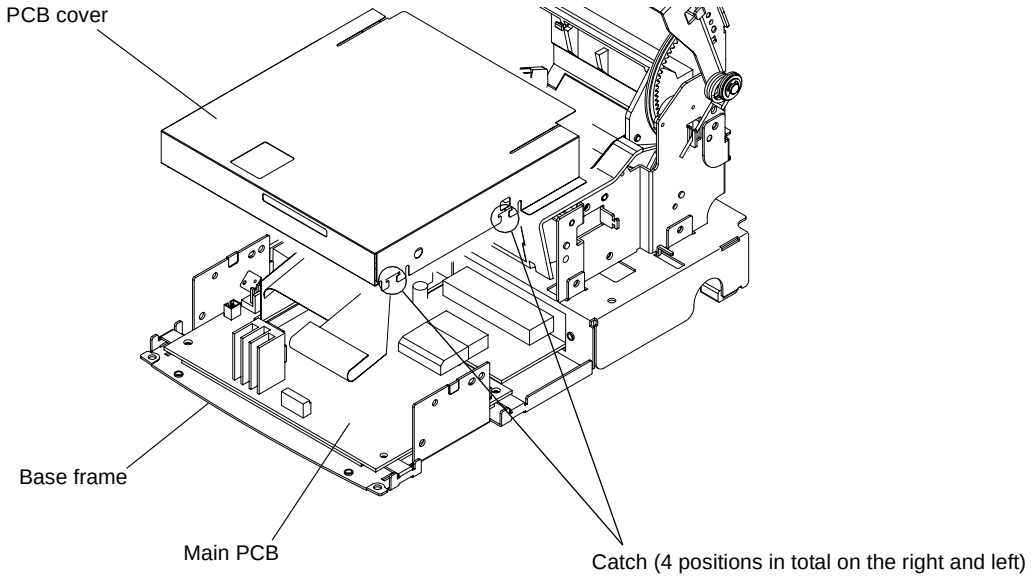
* The above figure shows a rewinder model.

3-8 Disassembly and Assembly of the Main PCB Unit

The disassembly procedure is explained mainly. When assembling the parts, follow the disassembly procedure in reverse.

♦ Removing the PCB Cover

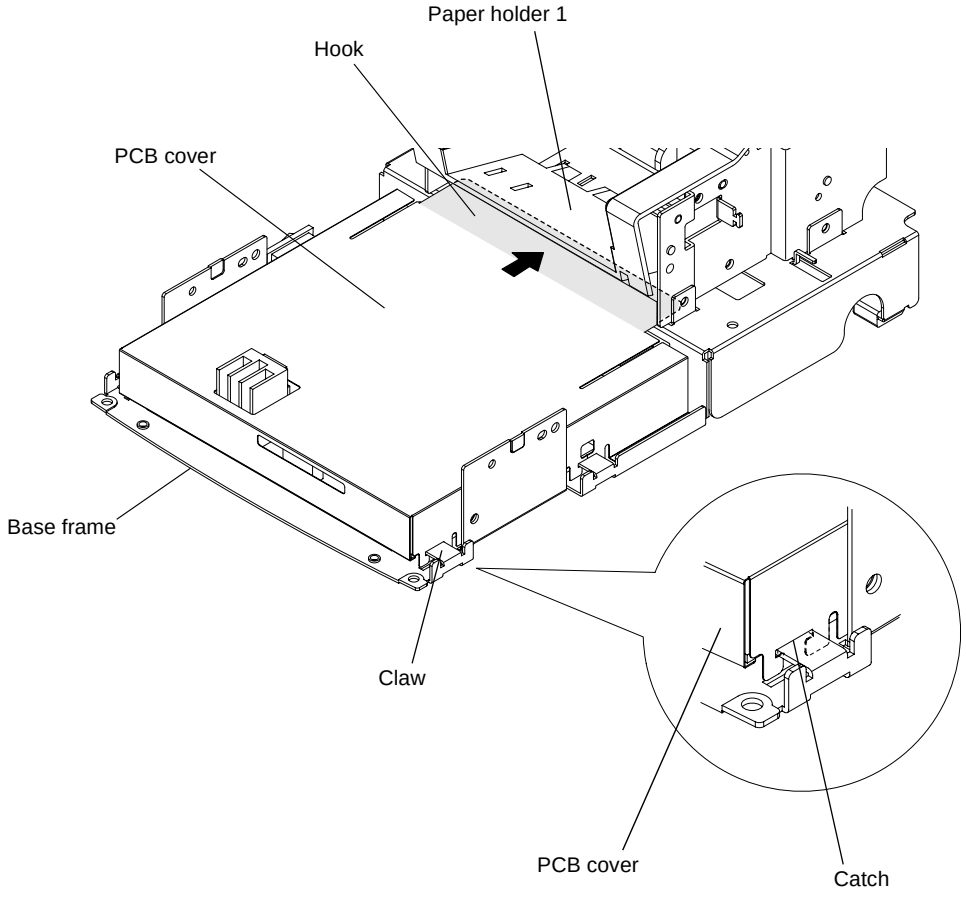
1) Remove the catches (4 positions in total on the right and left) from the PCB cover using a pair of tweezers, and remove the PCB cover from the base frame.



* The above figure shows a standard model.

♦ Precaution when Mounting the PCB Cover

- When mounting the PCB cover on the base frame, fit the catches (4 positions in total on the right and left) of the PCB cover to the claws on the base frame.
- Fit the hook on the PCB cover in the space between paper holder 1 and the base frame.

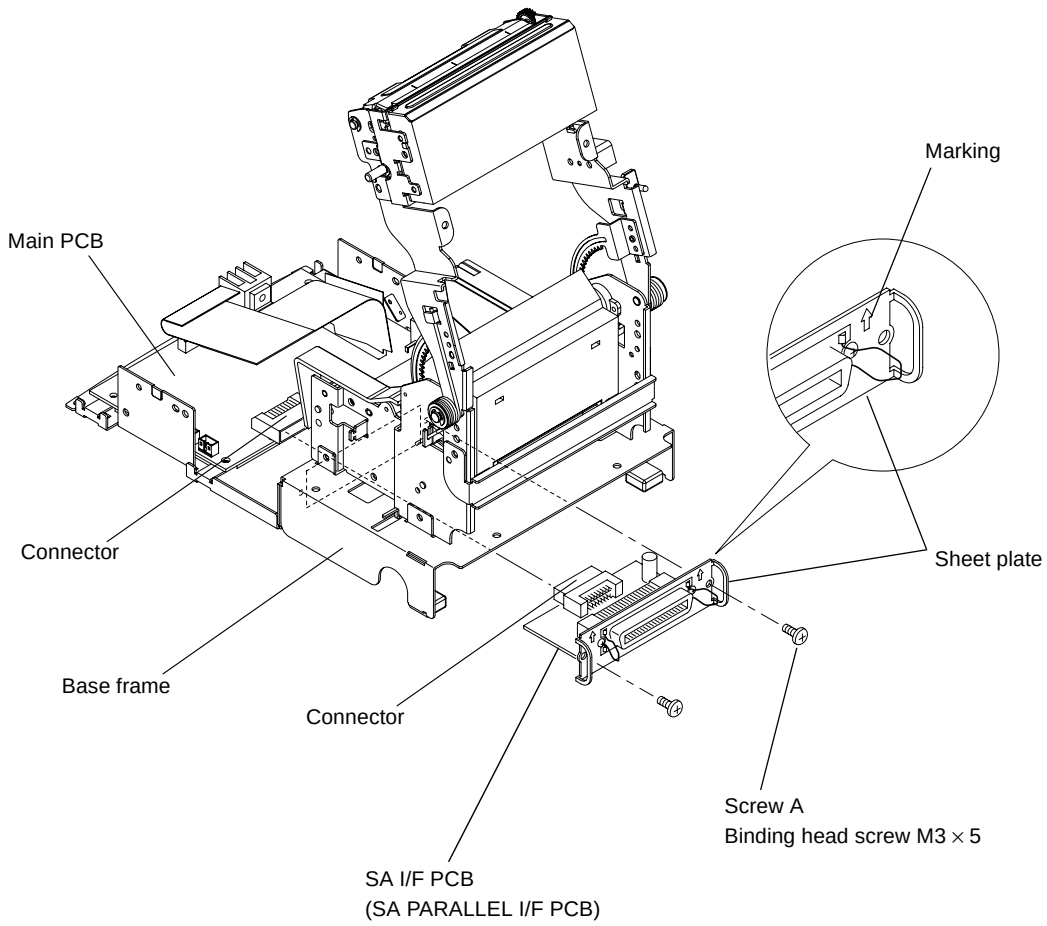


* The above figure shows a standard model.

♦ Removing the SA I/F PCB

* The SA I/F PCB can be removed from the printer fully assembled.
* There are several types of SA I/F PCB depending on the interface specification. In this section, the removing and mounting procedures for the SA parallel I/F PCB are explained; the procedures are the same for other types of SA I/F PCB.

1) Remove screws A (2 pcs.), and remove I/F PCB from the base frame.
   * Hold the both ends of the SA I/F PCB sheet plate and pull the SA I/F PCB out of the base frame. The connector of the SA I/F PCB is pulled out of the connector of the main PCB.



* The above figure shows a standard model.

♦ Precaution when Mounting the SA I/F PCB

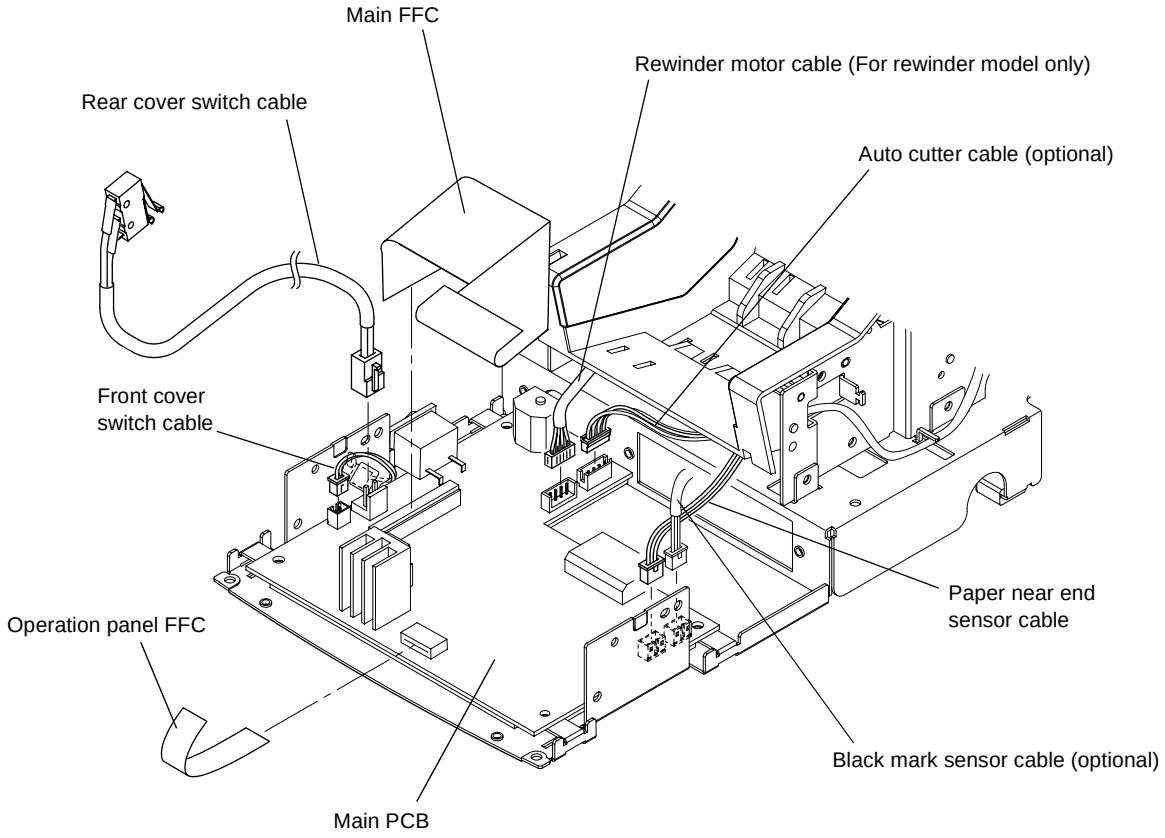
When mounting the SA I/F PCB on the base frame, insert the SA I/F PCB in the direction with the arrow marking facing upward.

♦ Removing the Cables

1) Remove all the cables from the connectors on the main PCB.

* The following cables are connected on the main PCB.

- Rear cover switch cable
- Front cover switch cable
- Paper near end sensor cable
- Rewinder motor cable (for rewinder model only)
- Main FFC
- Operation panel FFC
- Auto cutter cable (optional)
- Black mark sensor cable (optional)



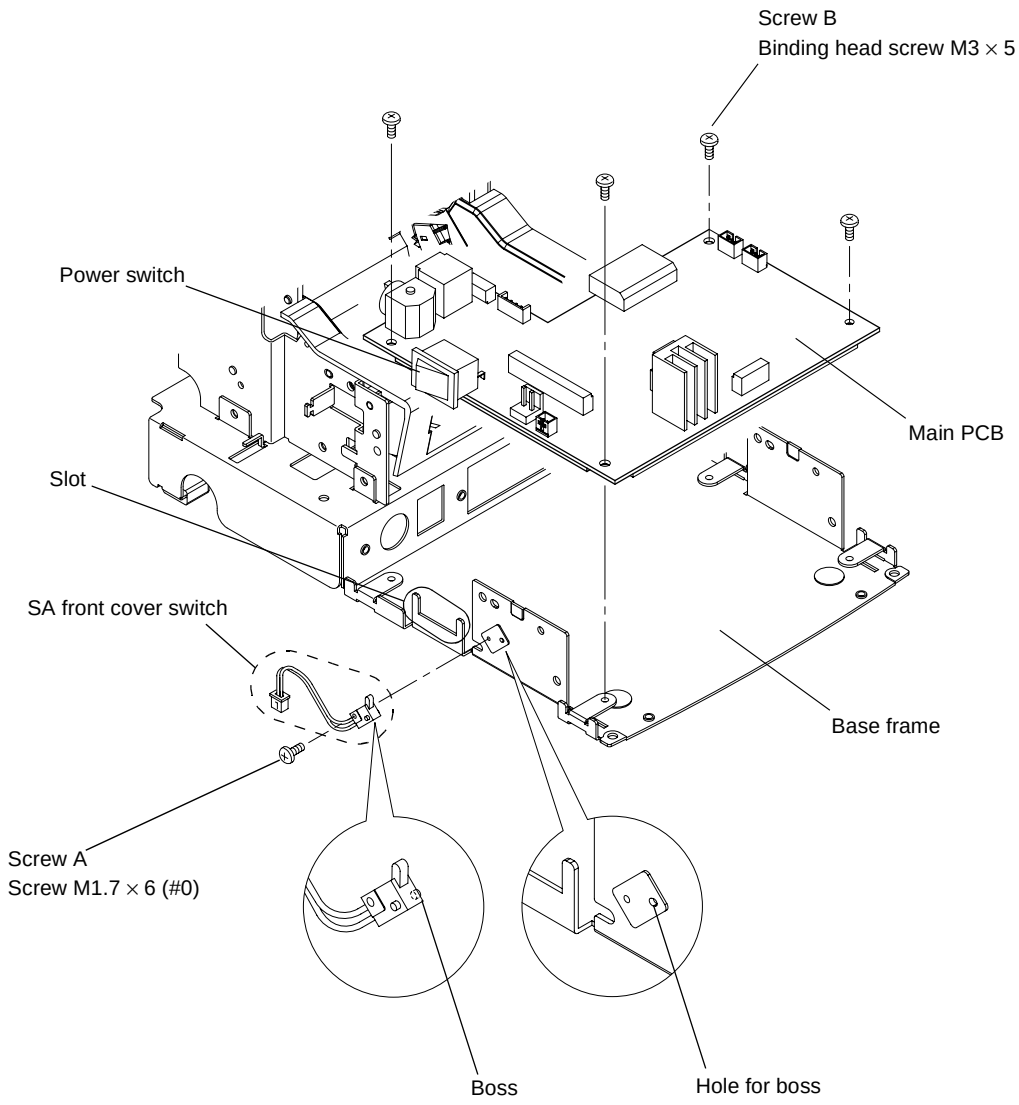
* The above figure shows a standard model.

♦ Removing the SA Front Cover Switch

1) Remove screw A (1 pc.), and remove the SA front cover switch from the base frame.

♦ Removing the Main PCB

1) Remove screws B (4 pcs.), and remove the main PCB from the base frame.



* The above figure shows a standard model.

♦ Precaution when Mounting the SA Front Cover Switch

- When mounting the SA front cover switch on the base frame, fit the boss into the corresponding hole for positioning.

♦ Precaution when Mounting the Main PCB

- Check that the power switch securely fits into the slot on the base frame.

3-9 Disassembly and Assembly of the Printing Unit

The disassembly procedure is explained mainly. When assembling the parts, follow the disassembly procedure in reverse.

* The manual cutter, lower blade, head cover, SA print head, and ribbon mask can be removed from the printer fully assembled.

♦ Removing the Manual Cutter

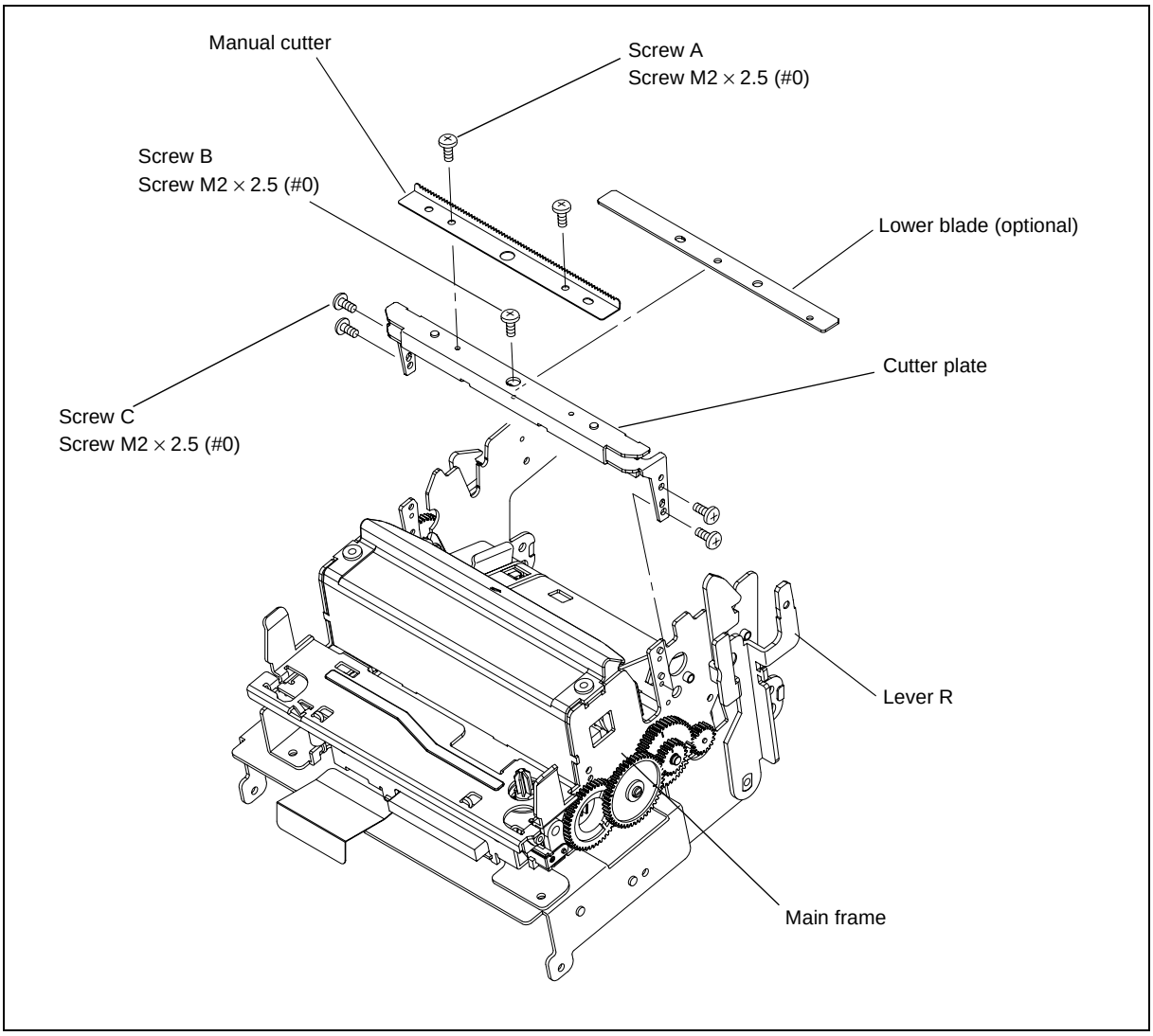
1) Remove screws A (2 pcs.), and remove the manual cutter from the cutter plate.

♦ Removing the Lower Blade (Optional)

1) Remove screw B (1 pc.), and remove the lower blade from the cutter plate.

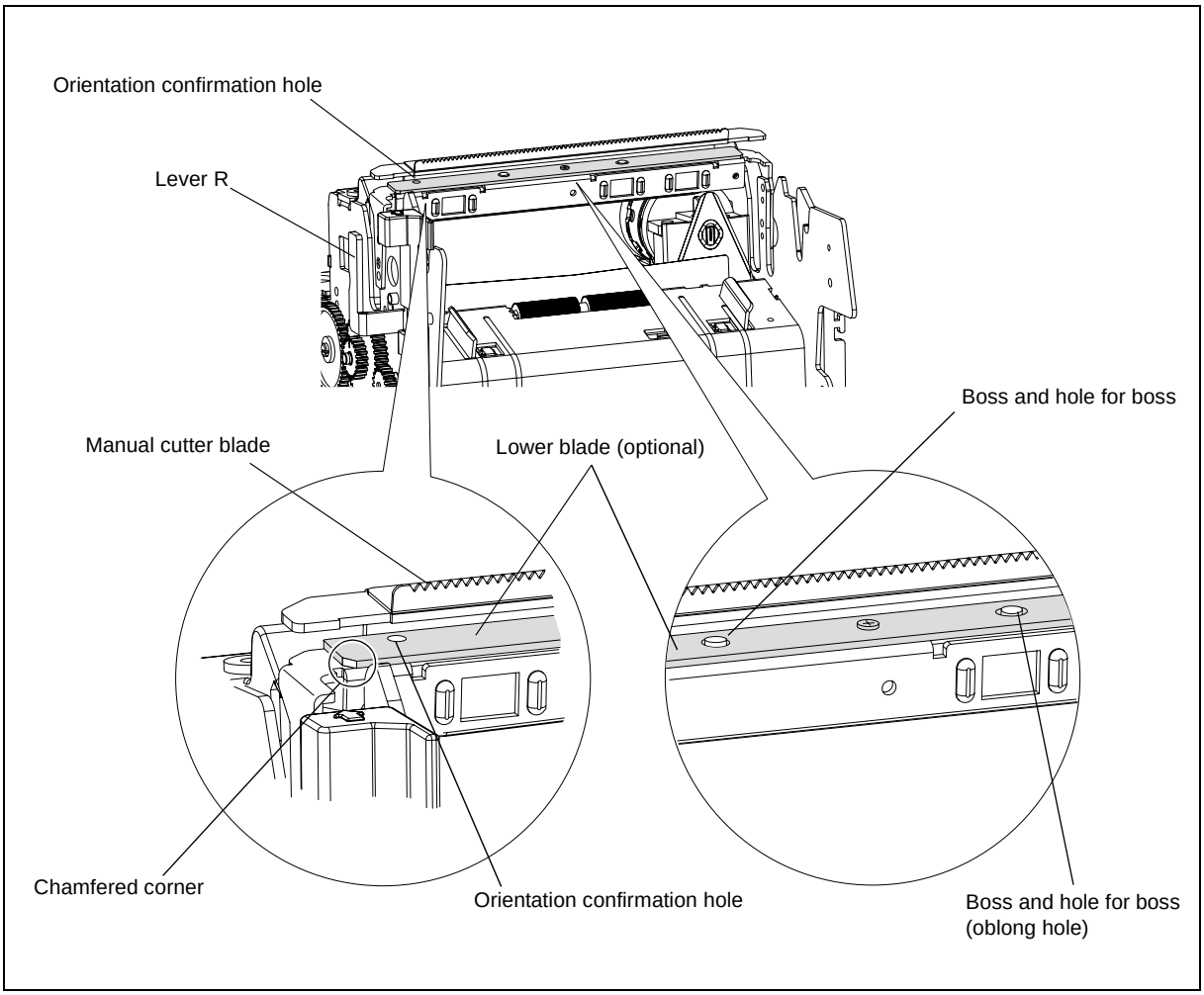
♦ Removing the Cutter Plate

1) Remove screws C (4 pcs.), and remove the cutter plate from the main frame.



♦ Precaution when Mounting the Lower Blade (Optional)

- When mounting the lower blade on the cutter plate, keep the orientation confirmation hole on the lower blade on the side of lever R and the chamfered corner of the lower blade on the auto cutter side.
- When mounting the lower blade on the cutter plate, fit the boss into the corresponding hole for positioning.



♦ Removing the Head Cover

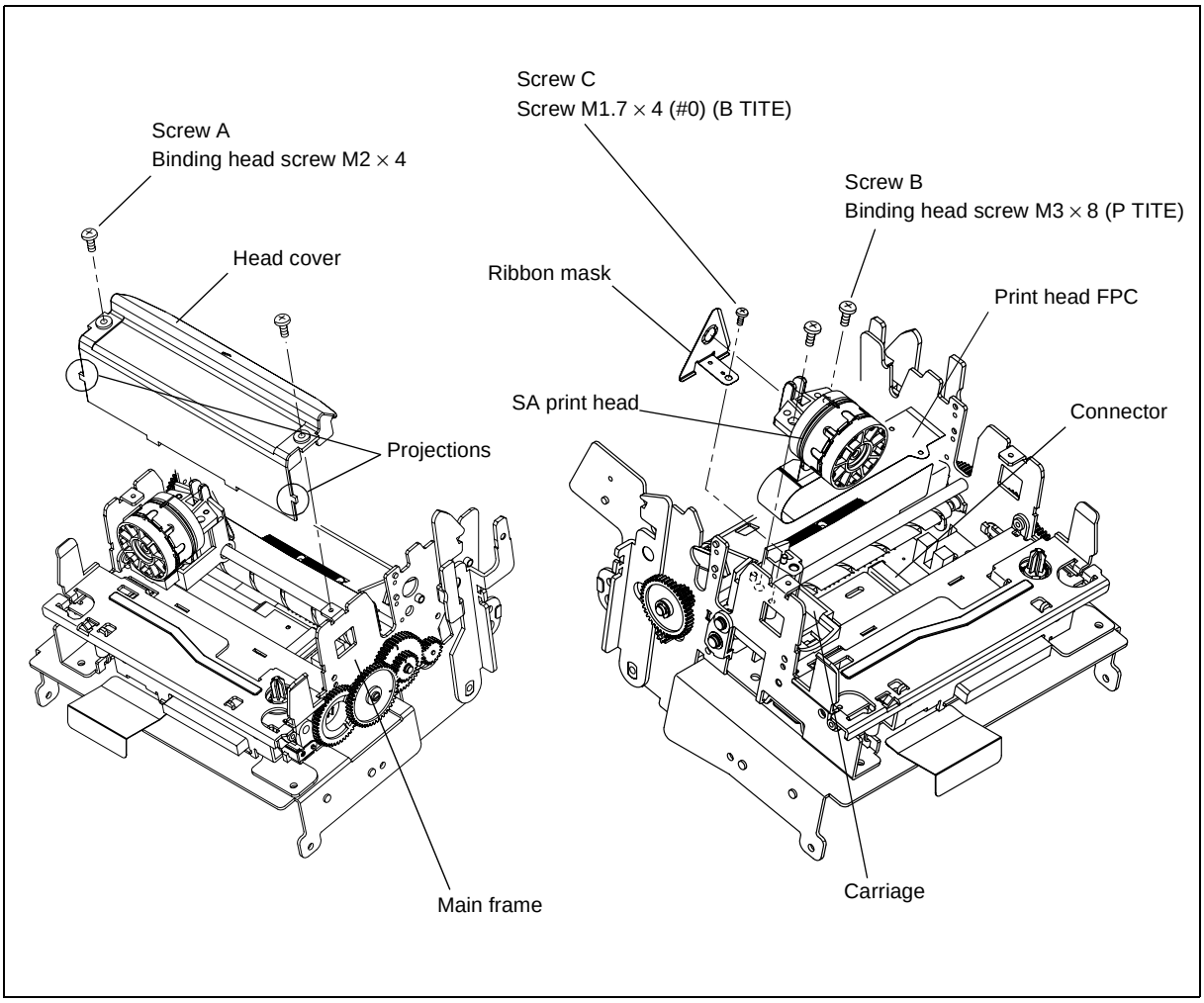
1) Remove screws A (2 pcs.), and remove the head cover from the main frame.
   * Unhook the projections (2 positions) of the head cover when removing the head cover.

♦ Removing the SA Print Head

1) Remove screws B (2 pcs.), and remove the SA print head from the carriage.
   * Remove the print head FPC from the connector.

♦ Removing the Ribbon Mask

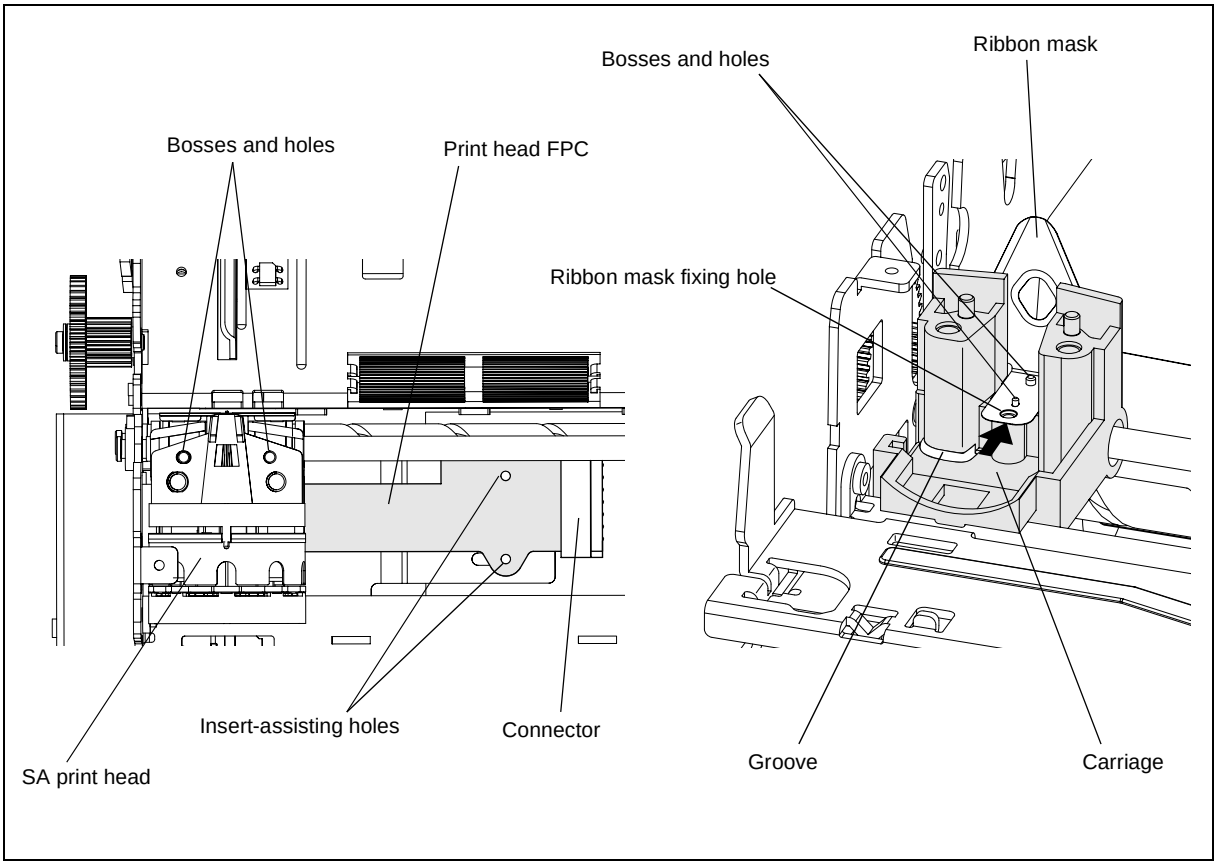
1) Remove screw C (1 pc.), and remove the ribbon mask from the carriage.



♦ Precaution when Mounting the SA Print Head and the Ribbon Mask

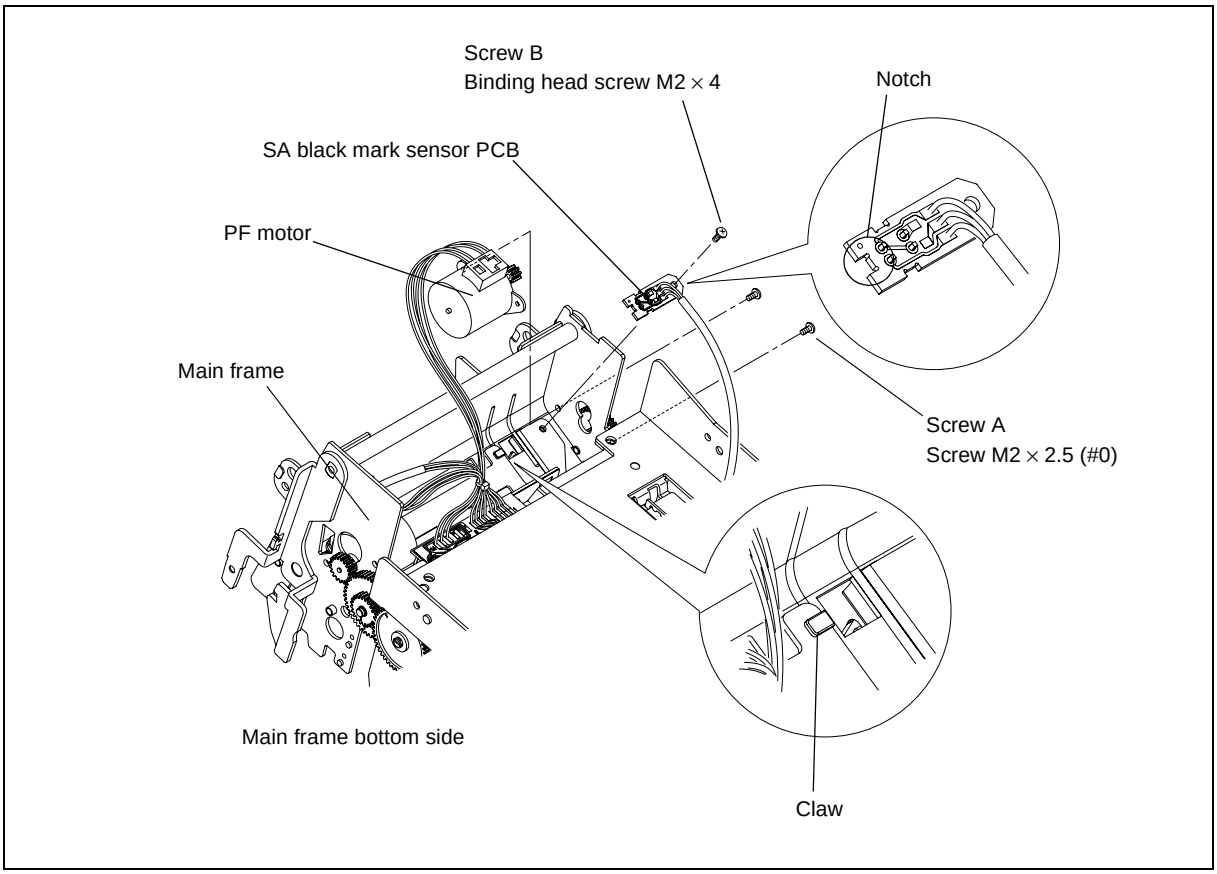
- When mounting the SA print head on the carriage, fit the boss into the corresponding hole for positioning.
- Set the print head FPC while fitting into the groove on the carriage, and insert the print head FPC into the connector. Use some tools and the insert-assisting holes (2 positions) when the print head FPC.
- When mounting the ribbon mask on the carriage, fit the bosses into the corresponding holes and slightly press the area near the ribbon mask fixing hole in the direction of the arrow.

Refer to “3-15 Adjusting the Head Gap” (Page 3-44).



♦ Removing the SA Black Mark Sensor PCB

1) Remove screws A (2 pcs.), and remove the PF motor from the main frame.
2) Remove screw B (1 pc.), and remove the SA black mark sensor PCB from the main frame.
   * The mounting position of the SA black mark sensor varies depending on the specification.



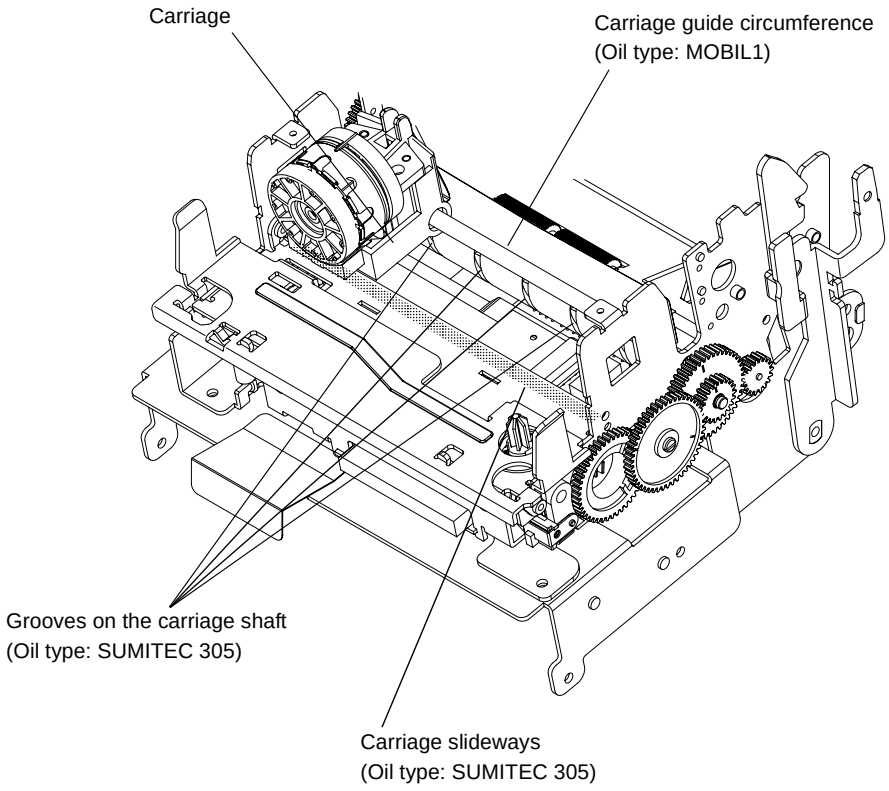
♦ Precaution when Mounting the SA Black Mark Sensor PCB

- When mounting the SA black mark sensor PCB on the main frame, fit the notch on the SA black mark sensor PCB to the claw on the main frame.

♦ Oiling to the Printing Unit

When maintenance of the printing unit has been performed, supply an adequate amount of oil to the positions shown in the figure below. Use the type of oil specified in the figure.

For the oil type, refer to “3-13 Oiling” (Page 3-42).



3-10 Disassembly and Assembly of the Platen Chassis and Cutter Chassis

3-10-1 Disassembly and Assembly of Standard Model

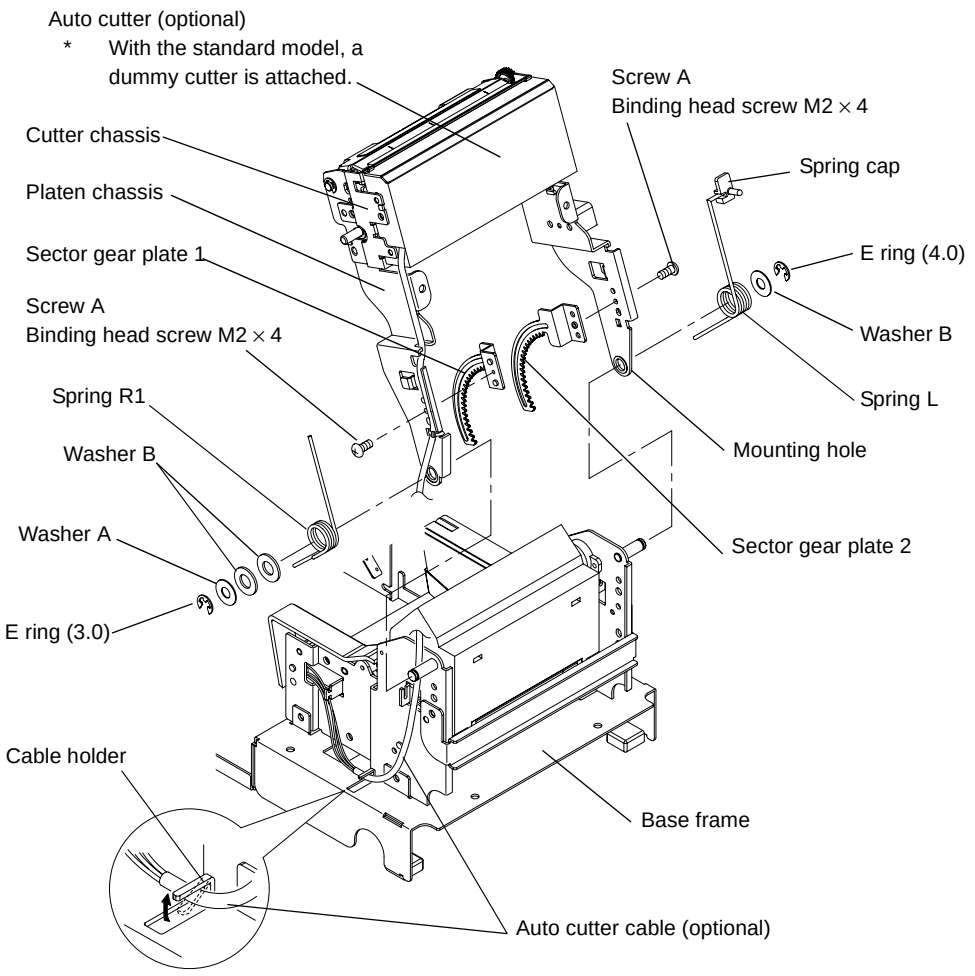
The disassembly procedure is explained mainly. When assembling the parts, follow the disassembly procedure in reverse.

♦ Removing the Sector Gear Plates 1 and 2

1) Remove screws A (1 pc. each), and remove sector gear plate 1 and sector gear plate 2 from the platen chassis.

♦ Removing the Platen Chassis

1) Remove E rings (2 pcs.), washer A (1 pc.), washers B (3 pcs.), spring L (with spring cap) and spring R1, and remove the platen chassis from the base frame.
   * Pull the bottom (where the mounting holes are located) of the platen chassis outwards when removing the platen chassis.
   * In the case of the auto cutter (optional) model, open the cable retainer of the auto cutter cable upwards and remove the cable.



* The above figure shows a standard model.

♦ Precaution when Mounting Sector Gear Plates 1, 2

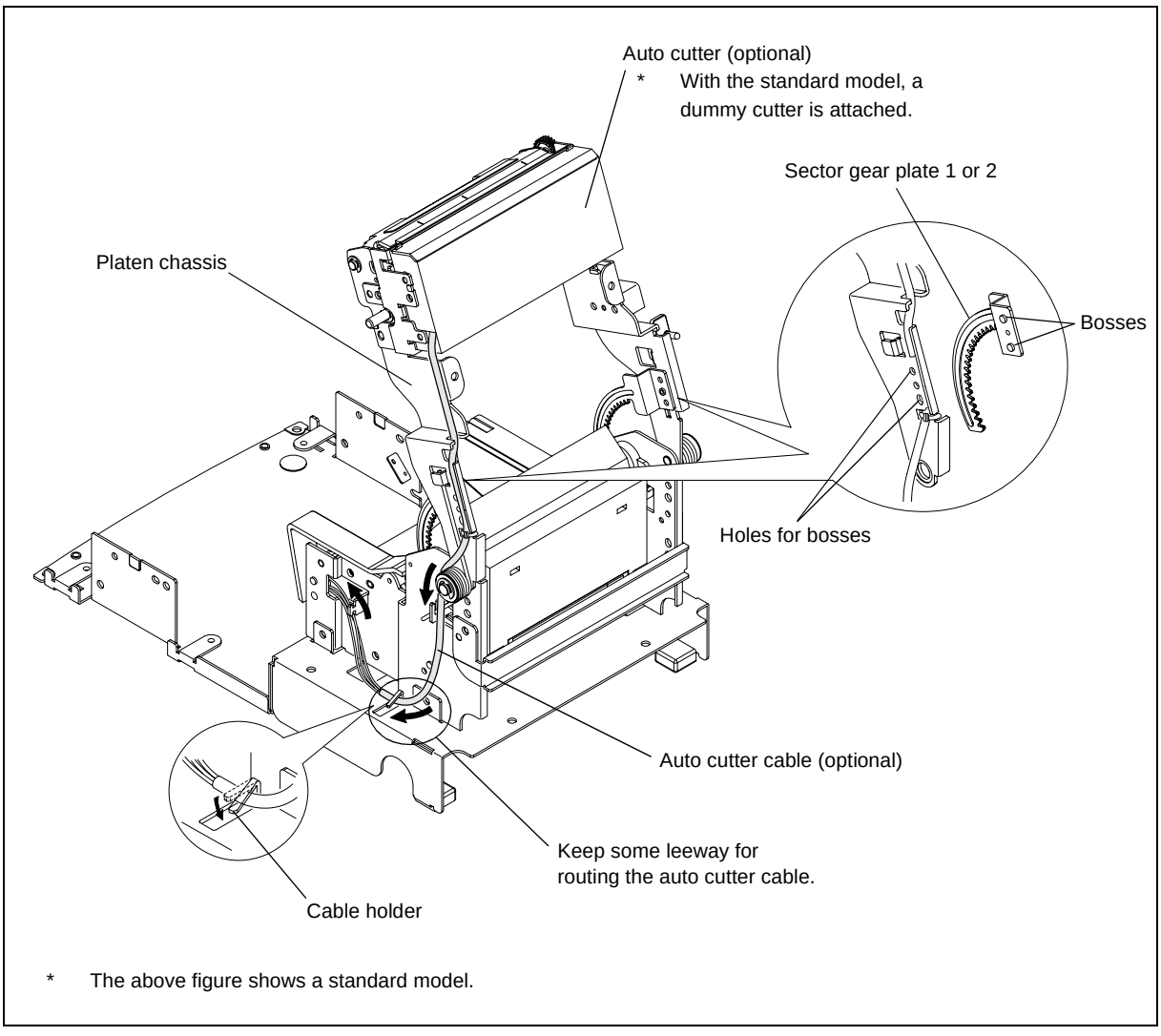
- When mounting sector gear plates 1 and 2 on the platen chassis, fit the bosses on the sector gear plates 1 and 2 into the corresponding holes on the platen chassis.
- When mounting sector gear plates 1 and 2 on the platen chassis, supply oil to these parts.

Refer to "3-10-1 Disassembly and Assembly of Standard Model" and "♦ Oiling to the Platen Chassis" (Page 3-30).

♦ Precaution when Mounting the Platen Chassis

- In the case of the auto cutter (optional) model, mount the platen chassis on the base frame, route the auto cutter cable as shown by the arrows keeping the platen chassis in the raised position, and then secure the cable with the cable holder. When securing the cable, allow some leeway for the auto cutter cable.
- When mounting the platen chassis on the base frame, supply oil to these parts.

Refer to "3-10-1 Disassembly and Assembly of Standard Model" and "♦ Oiling to the Platen Chassis" (Page 3-30).


Auto cutter (optional)
* With the standard model, a dummy cutter is attached.
Sector gear plate 1 or 2
Platen chassis
Bosses
Holes for bosses
Auto cutter cable (optional)
Keep some leeway for routing the auto cutter cable.
Cable holder

* The above figure shows a standard model.

♦ Removing the Platen Cover

1) Remove screws A (2 pcs.), and remove the platen cover from the platen.

CAUTION

- When removing the platen cover, be careful not to strain the paper guide. Otherwise, the paper guide fixing area may be damaged.

♦ Removing the Paper Guide

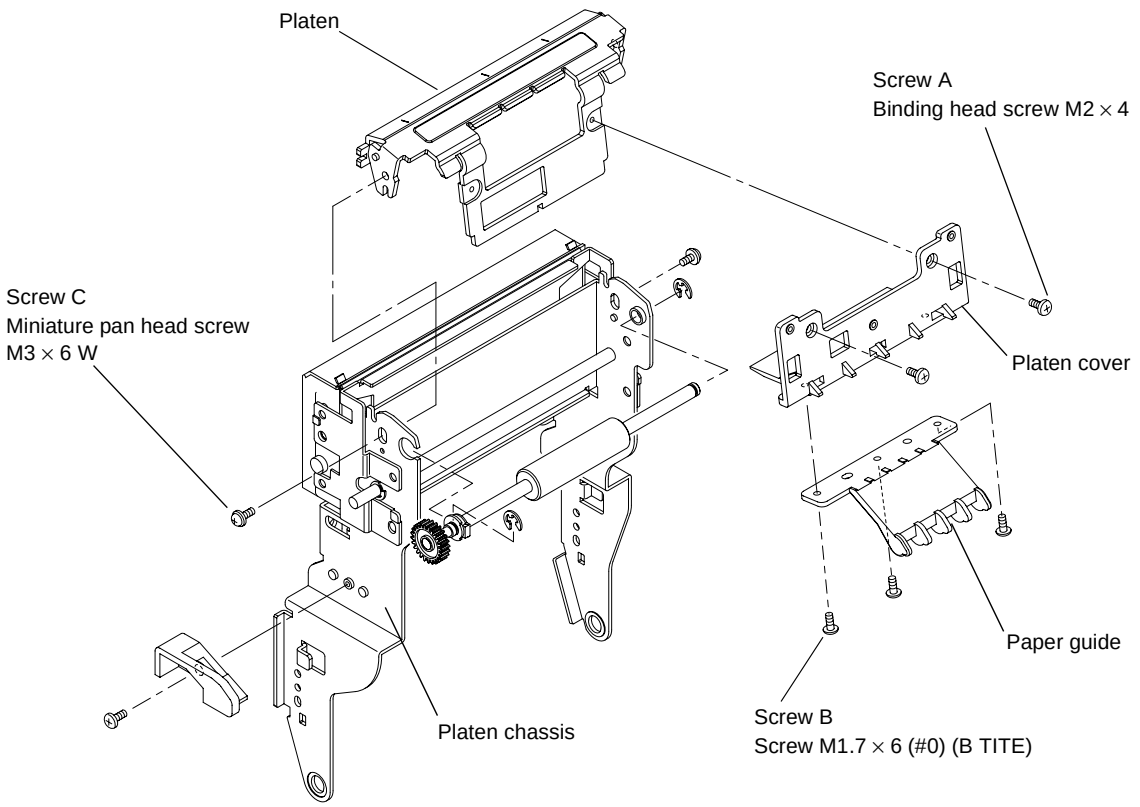
1) Remove screws B (2 pcs.), and remove the paper guide from the platen cover.

♦ Removing the Platen

1) Remove screws C (2 pcs.), and remove the platen from the platen chassis.

CAUTION

- When removing the platen, be careful not to strain the paper guide. Otherwise, the paper guide fixing area may be damaged.



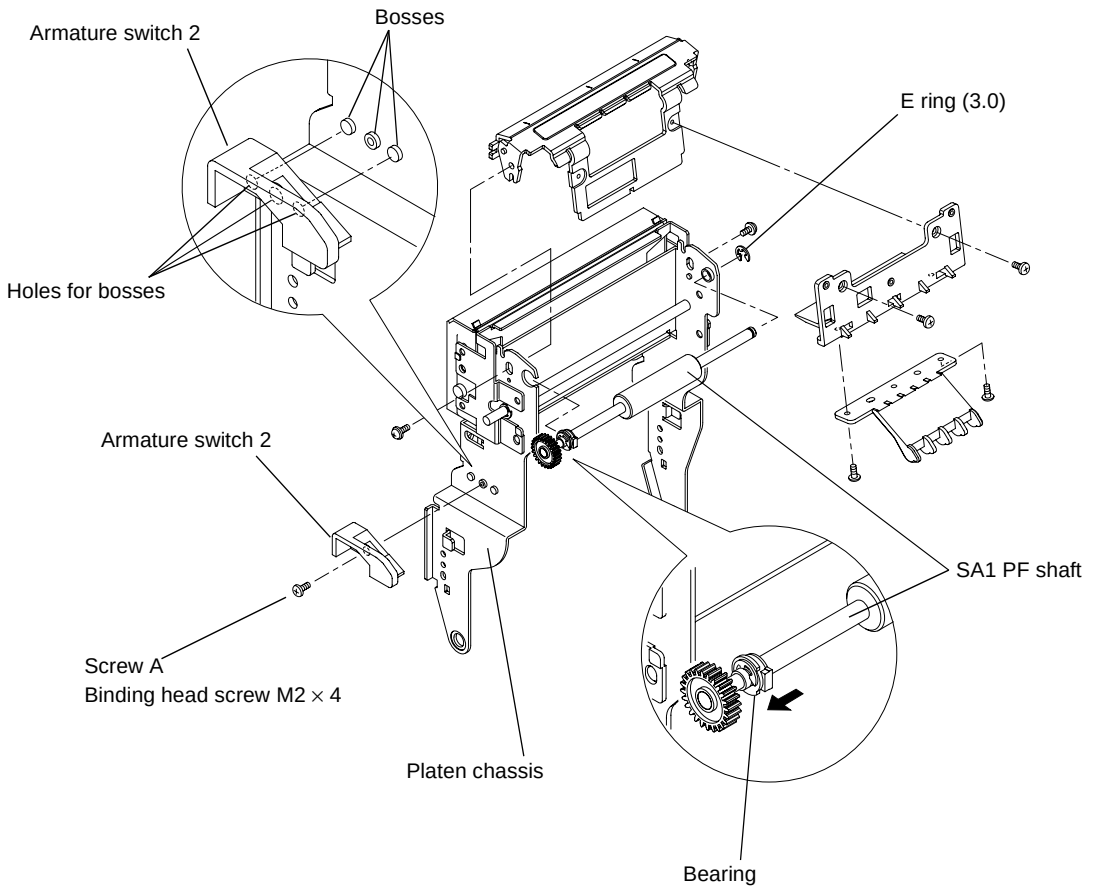
* The above figure shows a standard model.

♦ Removing Armature Switch 2

1) Remove screw A (1 pc.), and remove armature switch 2 from the platen chassis.

♦ Removing the SA1 PF shaft

1) Remove the E ring (1 pc.), and remove the SA1 PF shaft from the platen chassis.
   * Slide the bearing and the SA1 PF shaft in the direction of the arrow when removing the SA1 PF shaft.



* The above figure shows a standard model.

♦ Precaution when Mounting Armature Switch 2

- When mounting armature switch 2 on the platen chassis, check the orientation as shown in the figure and fit the boss into the corresponding hole for positioning.

♦ Precaution when Mounting the SA1 PF shaft

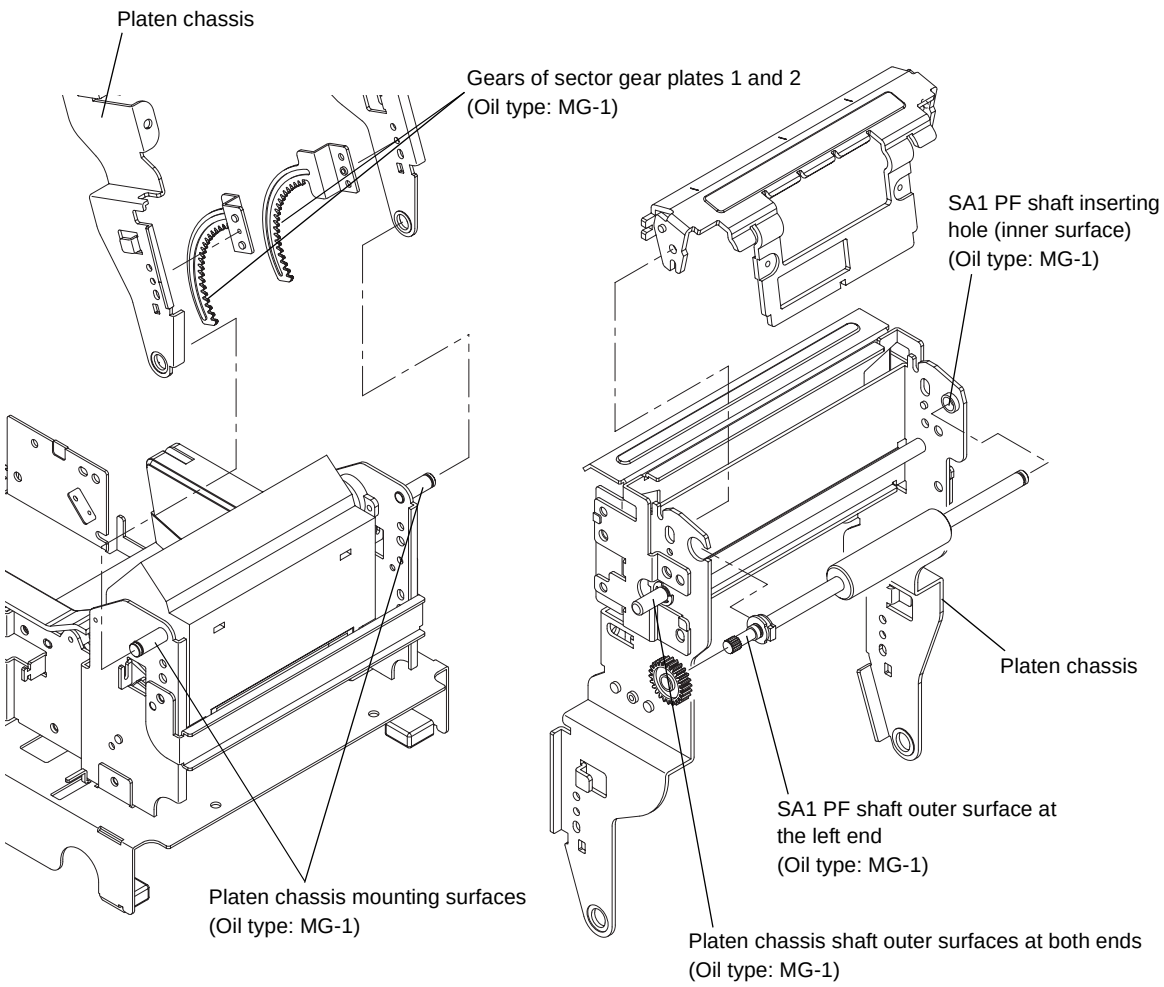
- When mounting the SA1 PF shaft on the platen chassis, supply oil to these parts.

Refer to “3-10-1 Disassembly and Assembly of Standard Model” and “♦ Oiling to the Platen Chassis” (Page 3-30).

♦ Oiling to the Platen Chassis

When maintenance of the platen chassis has been performed, supply an adequate amount of oil to the positions shown in the figure below. Use the type of oil specified in the figure.

For the oil type, refer to “3-13 Oiling” (Page 3-42).



* The above figure shows a standard model.

3-10-2 Disassembly and Assembly of Rewinder Model

The disassembly procedure is explained mainly. When assembling the parts, follow the disassembly procedure in reverse.

♦ Removing the Cutter Chassis

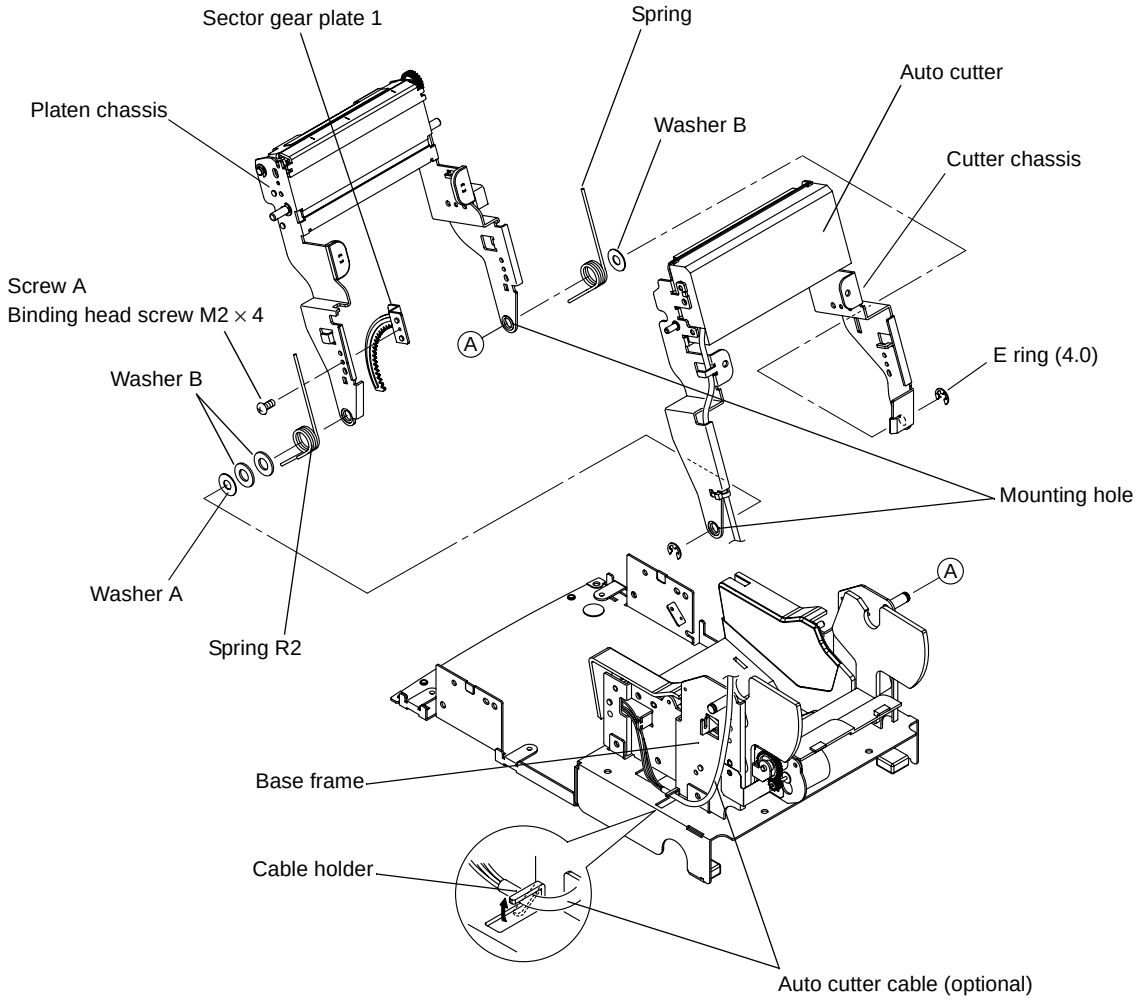
1) Remove the E rings (2 pcs.), and remove the cutter chassis from the base frame.
   * Pull the bottom (where the mounting holes are located) of the cutter chassis outwards when removing the cutter chassis.

♦ Removing the Sector Gear Plate 1

1) Remove screw A (1 pc.), and remove sector gear plate 1 from the platen chassis.

♦ Removing the Platen Chassis

1) Remove washer A (1 pc.), washers B (3 pcs.), spring, and spring R2, and remove the platen chassis from the base frame.
   * Pull the bottom (where the mounting holes are located) of the platen chassis outwards when removing the platen chassis.
   * Open the cable holder of the auto cutter cable upwards and remove the cable.



* The above figure shows a rewinder model.

♦ Precaution when Mounting the Sector Gear Plate 1

- When mounting sector gear plate 1 on the platen chassis, fit the bosses on sector gear plate 1 into the corresponding holes on the platen chassis.
- When mounting sector gear plate 1 on the platen chassis, supply oil to these parts.

Refer to “3-10-2 Disassembly and Assembly of Rewinder Model” and “♦ Oiling to the Platen Chassis and the Cutter Chassis” (Page 3-34).

♦ Precaution when Mounting the Platen Chassis

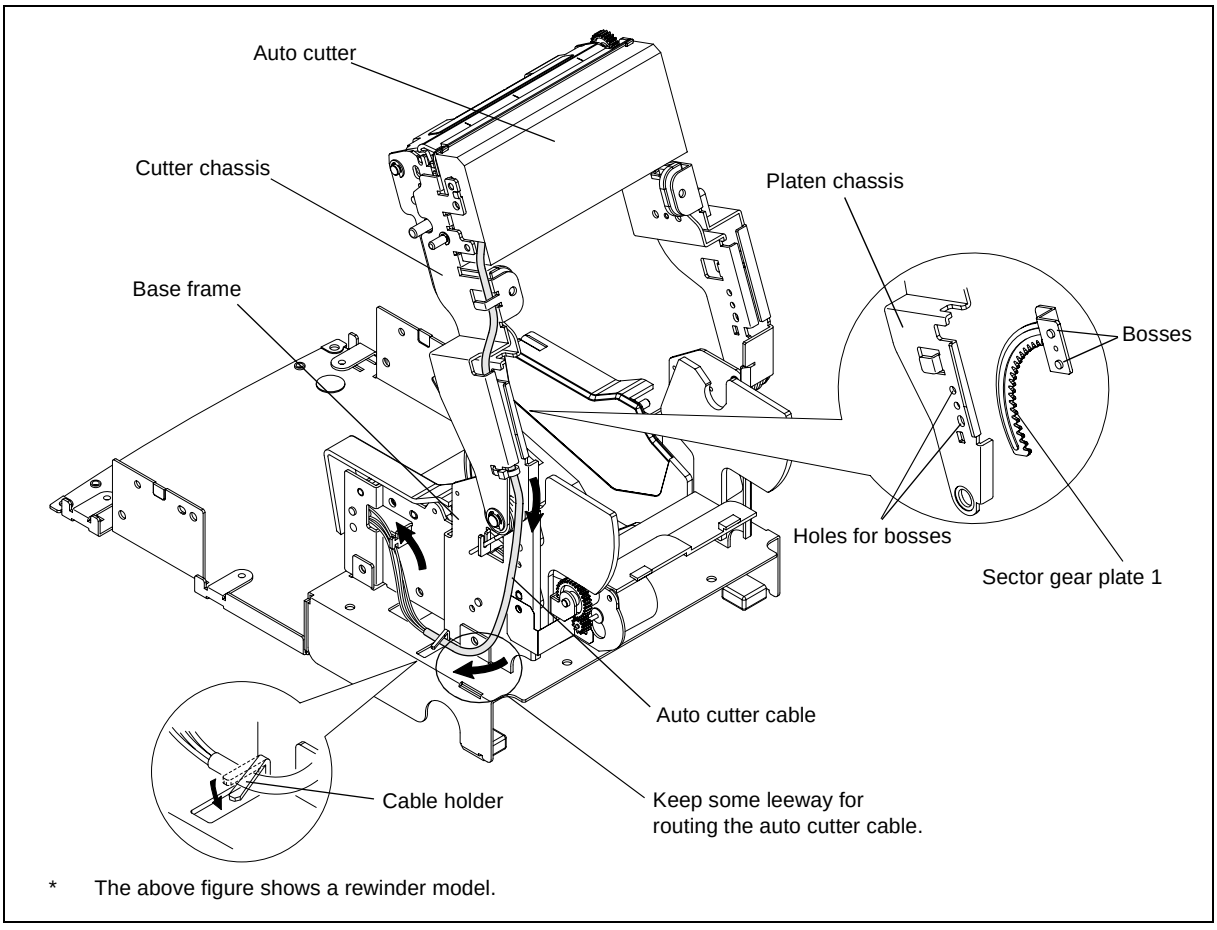
- When mounting the platen chassis on the base frame, supply oil to these parts.

Refer to “3-10-2 Disassembly and Assembly of Rewinder Model” and “♦ Oiling to the Platen Chassis and the Cutter Chassis” (Page 3-34).

♦ Precaution when Mounting the Cutter Chassis

- Mount the cutter chassis on the base frame, route the auto cutter cable as shown by the arrows keeping the cutter chassis in the raised position, and then secure the cable with the cable holder. When securing the cable, allow some leeway for the auto cutter cable.
- When mounting the cutter chassis on the base frame, supply oil to these parts.

Refer to “3-10-2 Disassembly and Assembly of Rewinder Model” and “♦ Oiling to the Platen Chassis and the Cutter Chassis” (Page 3-34).



* The above figure shows a rewinder model.

♦ Removing the Platen Cover

1) Remove screws A (binding head screw M2 × 4: 2 pcs.), and remove the platen cover from the platen.
   * The removing procedure of the platen cover is the same as is the case with the standard model.

Refer to "3-10-1 Disassembly and Assembly of Standard Model" and "♦ Removing the Platen Cover" (Page 3-28).

CAUTION

- When removing the platen cover, be careful not to strain the paper guide. Otherwise, the paper guide fixing area may be damaged.

♦ Removing the Paper Guide

1) Remove screws A (screw M1.7 × 6 (#0) B TITE: 3 pcs.), and remove the paper guide from the platen cover.
   * The removing procedure of the paper guide is the same as is the case with the standard model.

Refer to "3-10-1 Disassembly and Assembly of Standard Model" and "♦ Removing the Paper Guide" (Page 3-28).

♦ Removing the Platen

1) Remove screws C (miniature pan head screw M3 × 6 W: 2 pcs.), and remove the platen from the platen chassis.
   * The removing procedure of the platen chassis is the same as is the case with the standard model.

Refer to "3-10-1 Disassembly and Assembly of Standard Model" and "♦ Removing the Platen" (Page 3-28).

CAUTION

- When removing the platen, be careful not to strain the paper guide. Otherwise, the paper guide fixing area may be damaged.

♦ Removing the SA1 PF Shaft

1) Remove the E ring (3.0: 1 pc.), and remove the SA1 PF shaft from the platen chassis.
   * The removing procedure of the SA1 PF shaft is the same as is the case with the standard model.

Refer to "3-10-1 Disassembly and Assembly of Standard Model" and "♦ Removing the SA1 PF shaft" (Page 3-29).

♦ Precaution when Mounting the SA1 PF Shaft

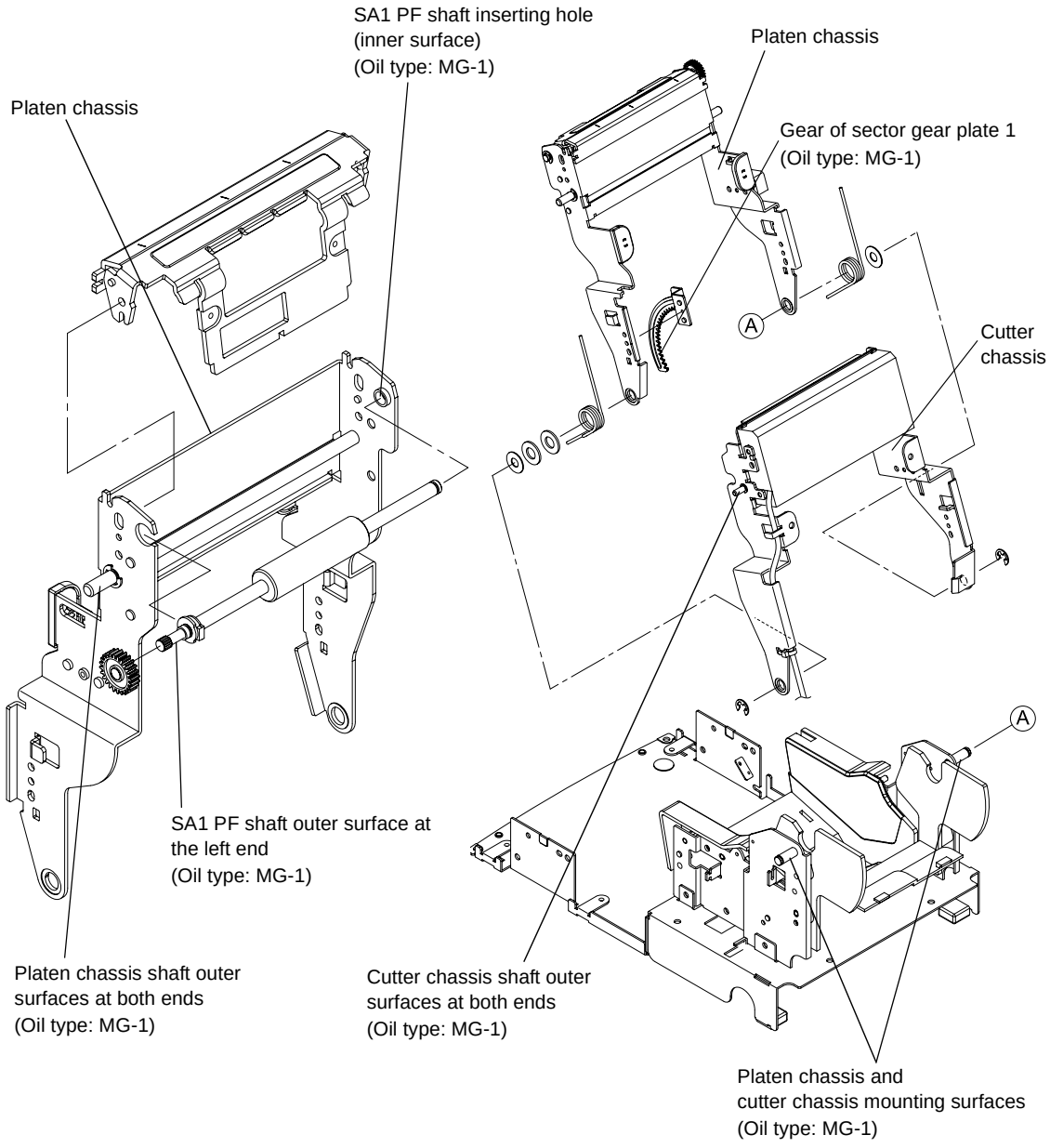
- When mounting the SA1 PF shaft on the platen chassis, supply oil to these parts.

Refer to "3-10-2 Disassembly and Assembly of Rewinder Model""♦ Oiling to the Platen Chassis and the Cutter Chassis" (Page 3-34).

♦ Oiling to the Platen Chassis and the Cutter Chassis

When maintenance of the platen chassis or the cutter chassis has been performed, supply an adequate amount of oil to the positions shown in the figure below. Use the type of oil specified in the figure.

For the oil type, refer to “3-13 Oiling” (Page 3-42).



* The above figure shows a rewinder model.

3-11 Disassembly and Assembly of the Auto Cutter

3-11-1 Disassembly and Assembly of Standard Model

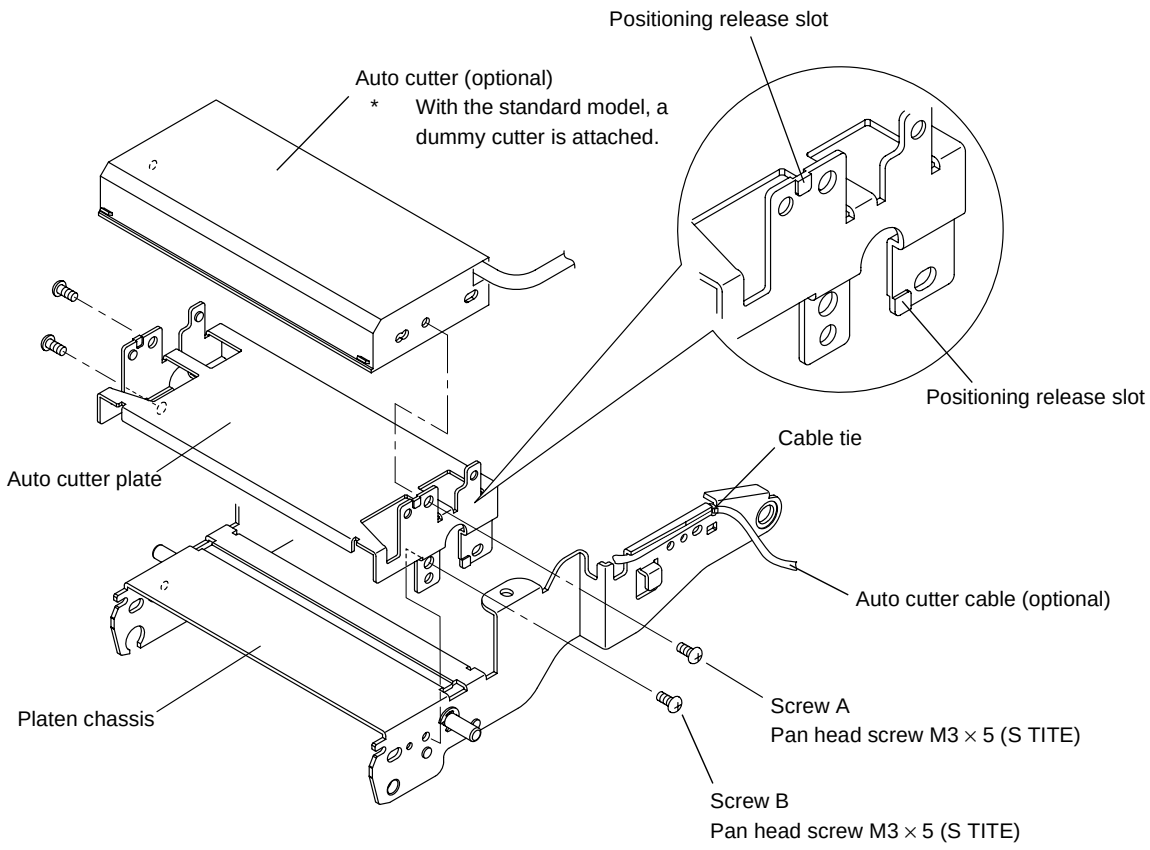
The disassembly procedure is explained mainly. When assembling the parts, follow the disassembly procedure in reverse.

♦ Removing the Auto Cutter (Optional)

1) Remove screws A (2 pcs.), and remove the auto cutter from the auto cutter plate.
   * Use the positioning release slots (2 positions) and disengage the auto cutter when removing the auto cutter.
   * Cut the cable tie for the auto cutter cables and remove the auto cutter.
   * With the standard model, a dummy cutter is attached to the auto cutter plate. If it is necessary to remove the dummy cutter, remove it in the same way as the auto cutter.

♦ Removing the Auto Cutter Plate

1) Remove screws B (2 pcs.), and remove the auto cutter plate from the platen chassis.
   * Use the positioning release slots (2 positions) and disengage the auto cutter plate when removing the auto cutter plate.


Positioning release slot
Auto cutter (optional)
* With the standard model, a dummy cutter is attached.
Positioning release slot
Cable tie
Auto cutter plate
Auto cutter cable (optional)
Platen chassis
Screw A
Pan head screw M3 × 5 (S TITE)
Screw B
Pan head screw M3 × 5 (S TITE)

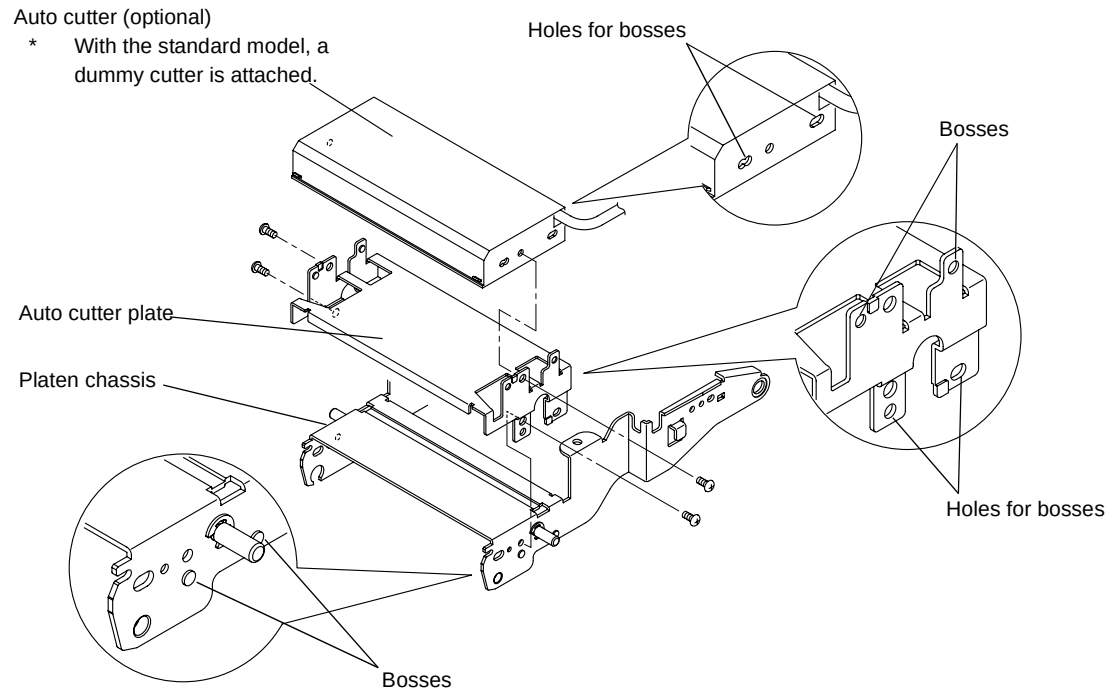
* The above figure shows a standard model.

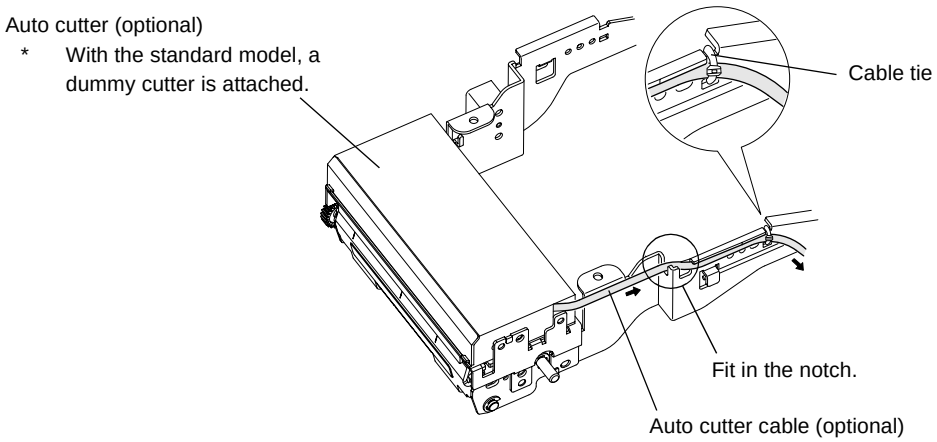
♦ Precaution when Mounting the Auto Cutter (Optional)

- When mounting the auto cutter on the auto cutter plate, fit the bosses into the corresponding holes for positioning.
- Route the auto cutter cable as shown in the figure and tie down the cable with the cable tie.

♦ Precaution when Mounting the Auto Cutter Plate

- When mounting the auto cutter plate on the platen chassis, fit the bosses into the corresponding holes for positioning.




Auto cutter (optional)
* With the standard model, a dummy cutter is attached.
Cable tie
Fit in the notch.
Auto cutter cable (optional)

* The above figure shows a standard model.

3-11-2 Disassembly and Assembly of Rewinder Model

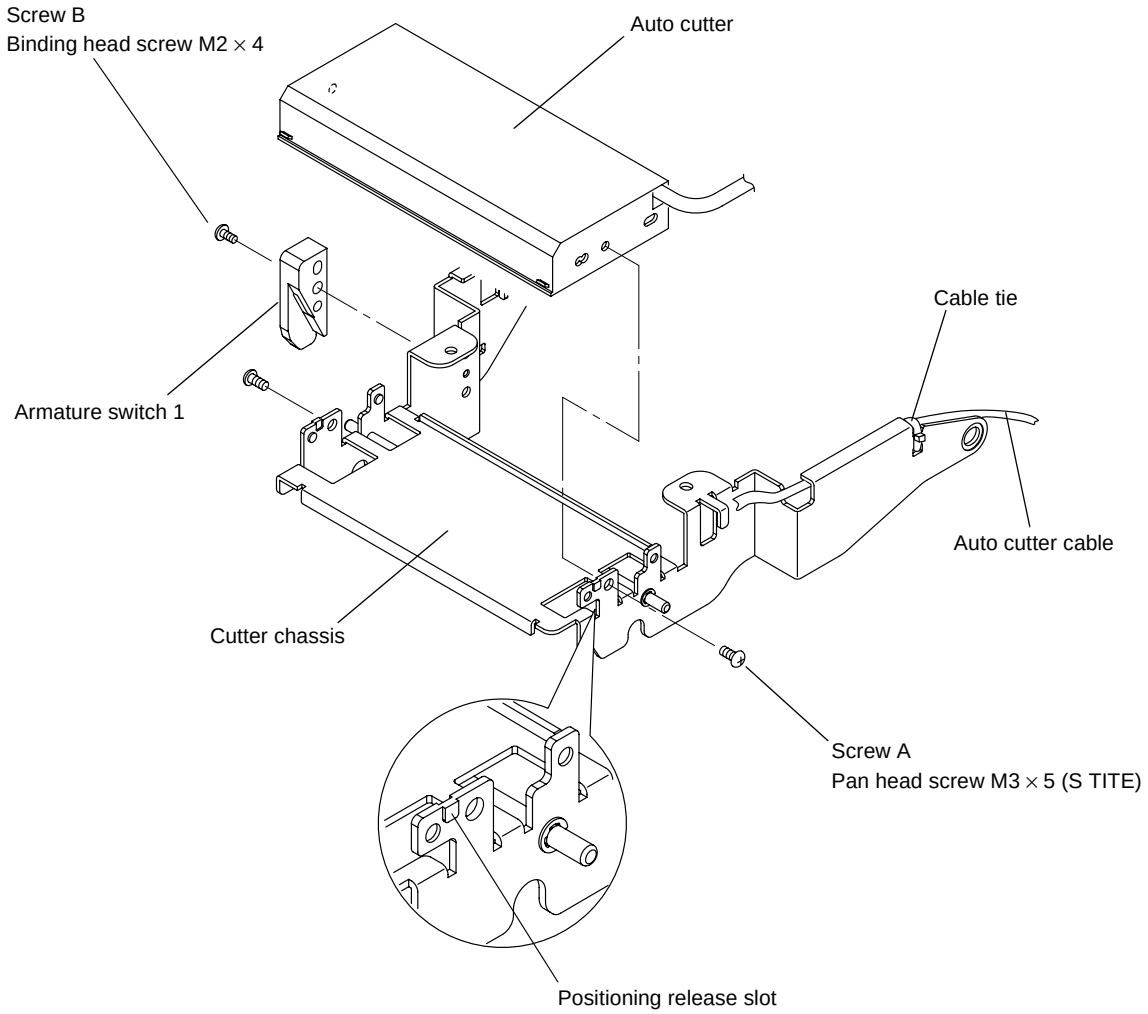
The disassembly procedure is explained mainly. When assembling the parts, follow the disassembly procedure in reverse.

♦ Removing the Auto Cutter

1) Remove screws A (2 pcs.), and remove the auto cutter from the cutter chassis.
   * Use the positioning release slots (2 positions) and disengage the auto cutter when removing the auto cutter.
   * Cut the cable tie of the auto cutter cables and remove the auto cutter.

♦ Removing Armature Switch 1

1) Remove screw B (1 pc.), and remove armature switch 1 from the cutter chassis.



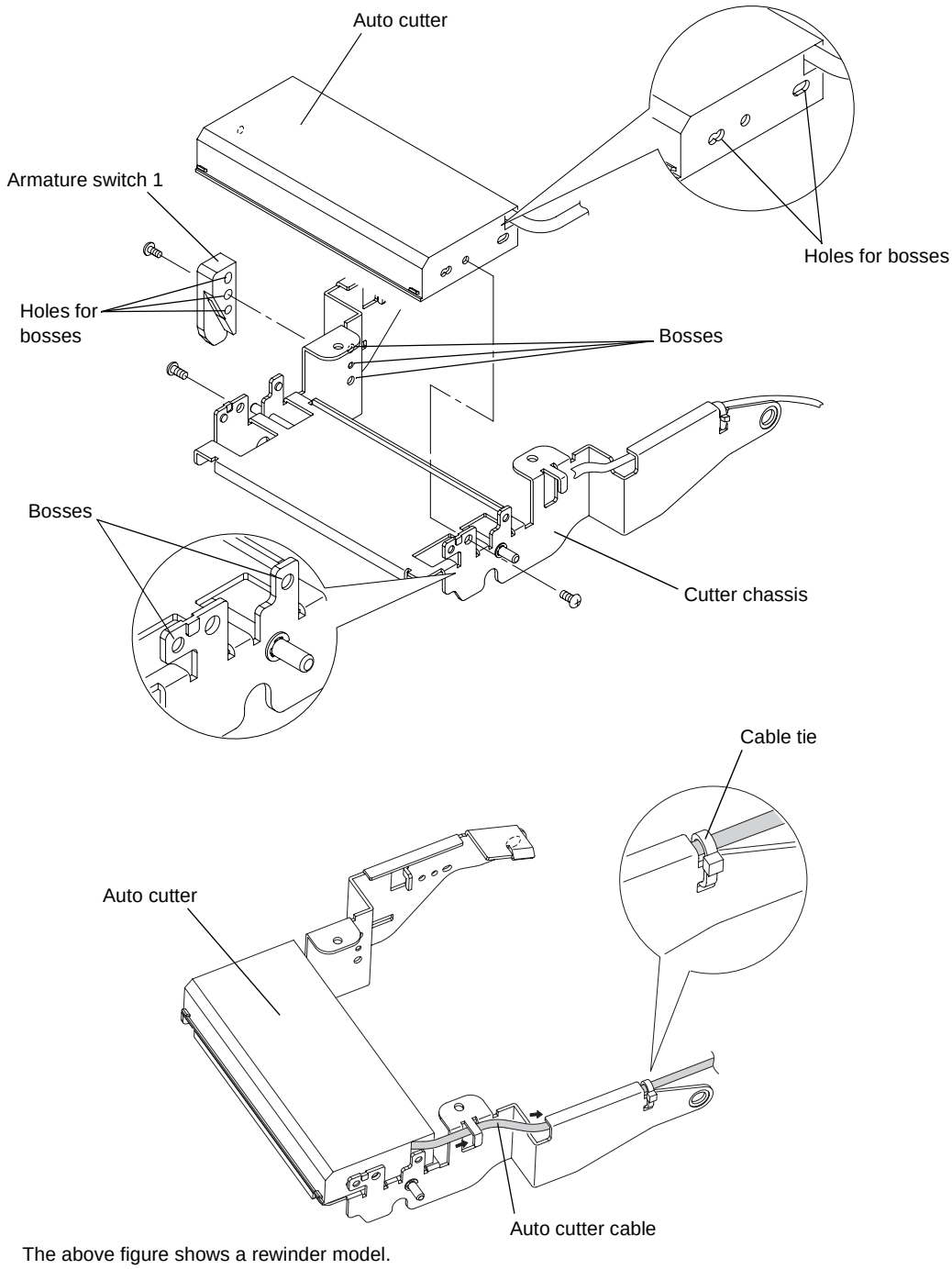
* The above figure shows a rewinder model.

♦ Precaution when Mounting the Auto Cutter

- When mounting the auto cutter on the cutter chassis, fit the bosses into the corresponding holes for positioning.
- Route the auto cutter cable as shown in the figure and tie down the cable with the cable tie.

♦ Precaution when Mounting Armature Switch 1

- When mounting armature switch 1 on the cutter chassis, check the orientation as shown in the figure and fit the bosses into the corresponding holes for positioning.



* The above figure shows a rewinder model.

3-12 Disassembly and Assembly of the Rewinder Unit (For rewinder model only)

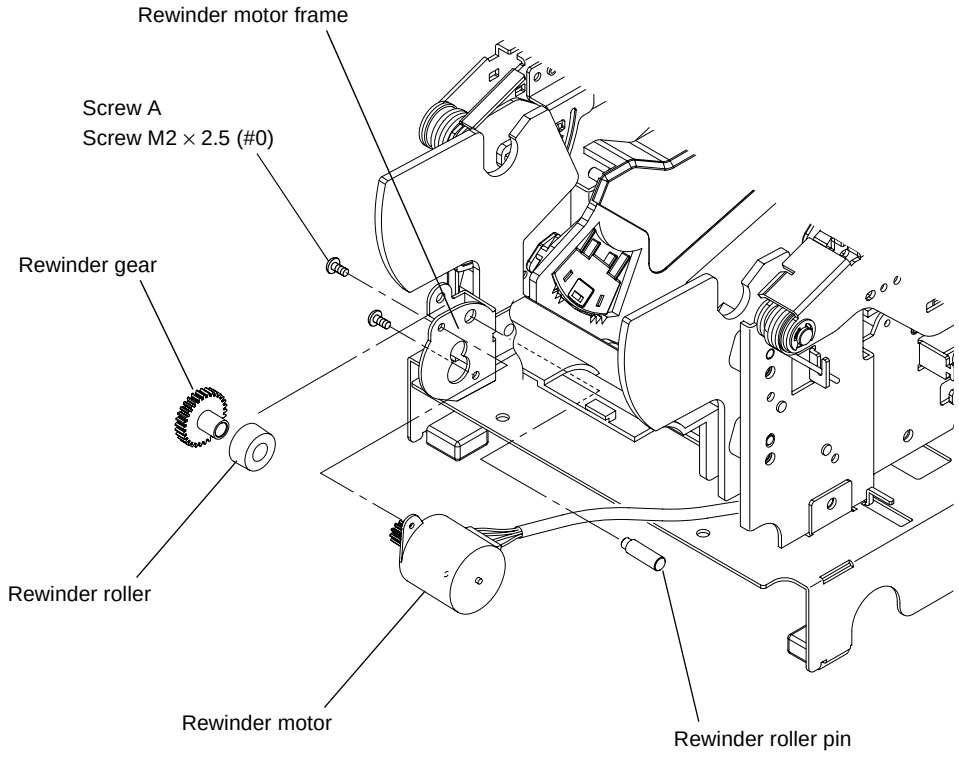
The disassembly procedure is explained mainly. When assembling the parts, follow the disassembly procedure in reverse.

♦ Removing the Rewinder Motor

1) Remove screws A (2 pcs.), and remove the rewinder motor from the rewinder motor frame.

♦ Removing the Rewinder Gear, Rewinder Roller and Rewinder Roller Pin

1) Remove the rewinder gear, rewinder roller and rewinder roller pin from the rewinder motor frame.



* The above figure shows a rewinder model.

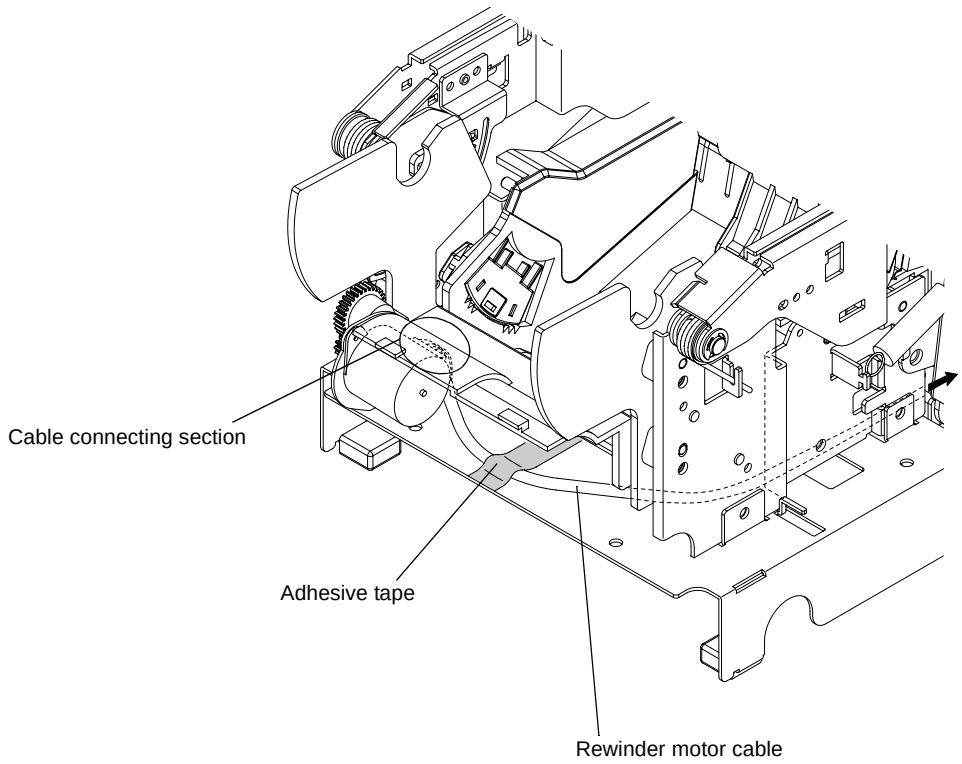
♦ Precaution when Mounting the Rewinder Motor

- Attach the rewinder motor in an angle so that the cable connecting section will be hidden.
- When the rewinder motor has been mounted on the rewinder motor frame, route the rewinder motor cable as shown in the figure and secure it with adhesive tape.

♦ Precaution when Mounting the Rewinder Roller Pin

- When mounting the rewinder roller pin on the rewinder motor frame, supply oil to these parts.

Refer to "3-12 Disassembly and Assembly of the Rewinder Unit (For rewinder model only)" and "♦ Oiling to the Rewinder Unit" (Page 3-41).

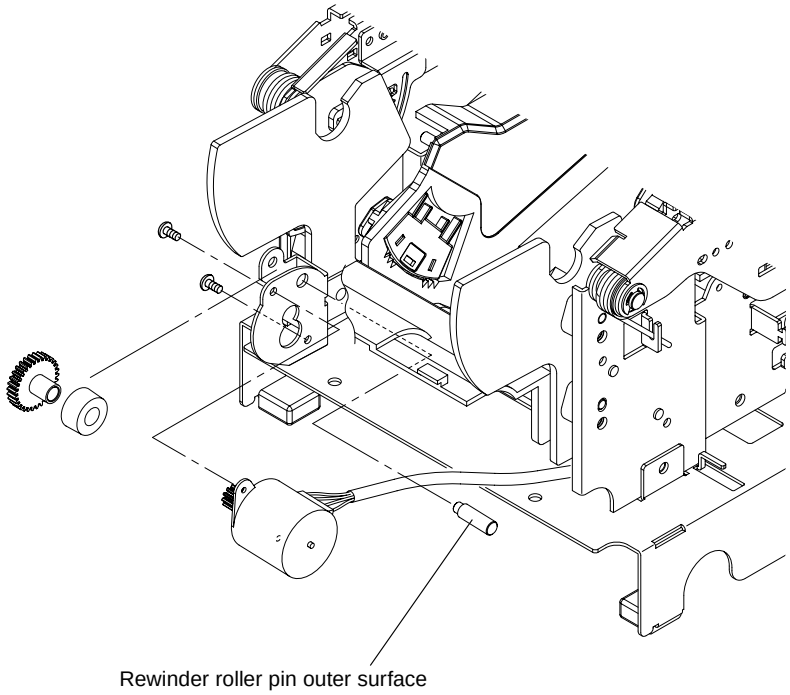


* The above figure shows a rewinder model.

♦ Oiling to the Rewinder Unit

When maintenance of the rewinder unit has been performed, supply an adequate amount of oil to the positions shown in the figure below. Use the type of oil specified in the figure.

For the oil type, refer to “3-13 Oiling” (Page 3-42).



Rewinder roller pin outer surface
(Oil type: MG-1)

* The above figure shows a rewinder model.

3-13 Oiling

Oiling Period

The printer is free from maintenance and oiling is not required for normal use.

When the printer has been disassembled, assembled or cleaned or when a part has been replaced, supply oil to the related parts.

Oil Table

Name	Type	Manufacturer
FLOIL grease	MG-1	Kanto Chemical Co., Ltd.
Lubricant	MOBIL1	ExxonMobil Yugen Kaisha
Precision machine grease	SUMITEC 305	Sumico Lubricant Co., Ltd.

Oiling Positions

Oiling positions are explained in “Chapter 3 DISASSEMBLY, ASSEMBLY AND ADJUSTMENT”. Refer to the relevant section.

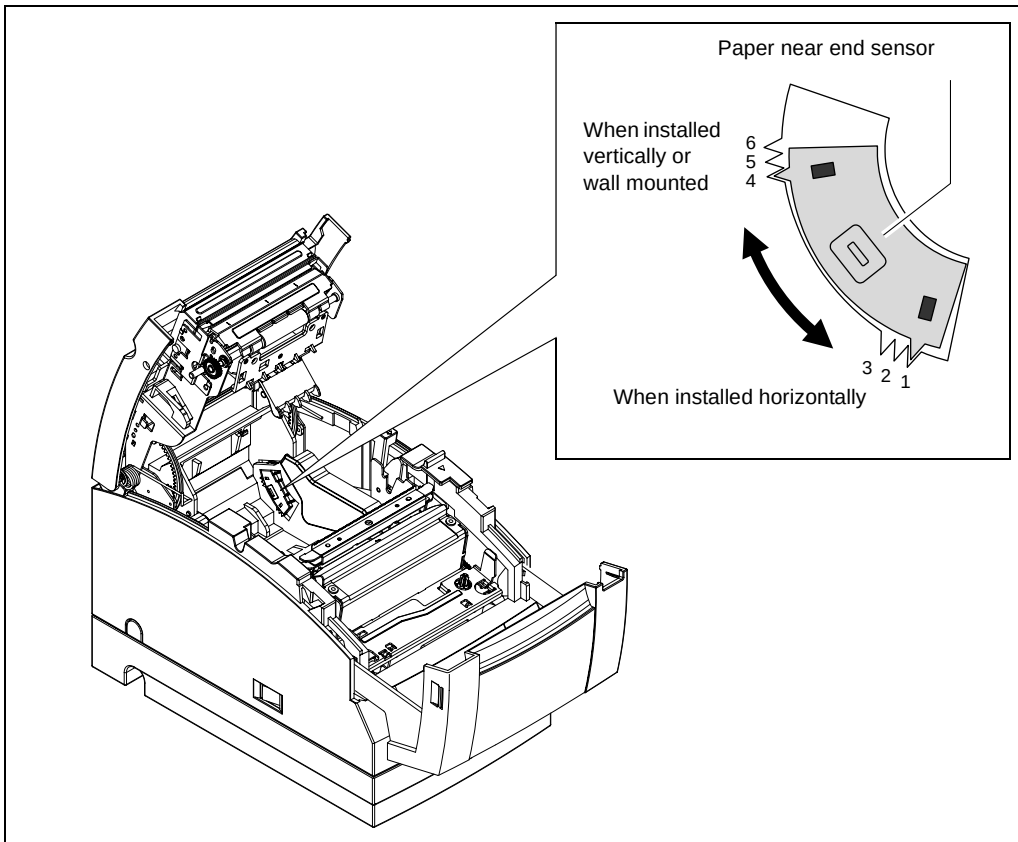
3-14 Setting the Paper Near End Sensor

Change the sensor position according to the printer installation and the inner diameter of the roll paper.

Refer to the following table, hold down the concave part in the center of the sensor with your finger and move it right or left to the position suitable for the working condition. (When shipped from the factory, it is set at ϕ24 mm.)

Installation Method	Remaining Roll Paper (mm)	Sensor Location
Horizontal	Approx. ϕ22	1
	Approx. ϕ24	2
	Approx. ϕ27	3
Vertical (wall mount)	Approx. ϕ27	4
	Approx. ϕ24	5
	Approx. ϕ22	6

* The remaining roll paper (outer diameter of the roll paper) differs greatly according to the type of roll paper used. Use these values as guidelines.
* If the sensor has detected the remaining roll paper during printing, the printer stops printing when all the received data has been printed.
* If you are using a model with parallel (IEEE1284) interface, you can select either “enabled” or “disabled” state for the sensor in the soft SW setting mode.
* If you are using a model with serial (RS232C) interface, the sesor is always enabled.



* The above figure shows a standard model.

3-15 Adjusting the Head Gap

When the following parts have been removed or when the fixing screws of these parts are loosened, be sure to adjust the head gap.

- Mechanism unit
- Platen

Head Gap Adjusting Procedure

1) Remove case U.

Refer to "3-6 Disassembly and Assembly of Case U, Front Cover and Operation Panel PCB" and "♦ Removing the Lever Cover, Case U and Knob N" (Page 3-7).

2) Close the platen chassis.
3) Use thickness gauges and measure the clearance between the head and the platen at the marking areas (3 positions) on the platen.

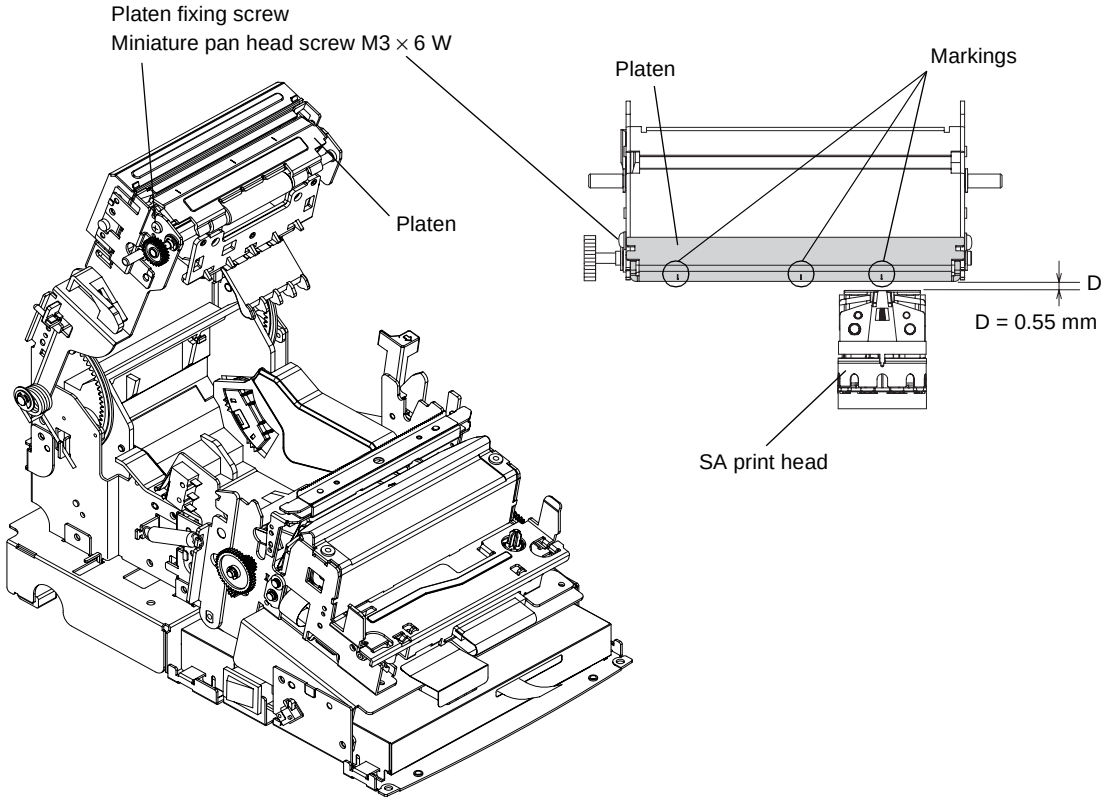
   Appropriate head gap D = 0.55 mm

4) If the head gap is not appropriate, loosen the platen fixing screws (2 pcs.), adjust the platen position to the appropriate clearance and secure the platen in this position.

   * When assembling the parts, follow the procedure in reverse.

CAUTION

- If the gap between the head and the platen is not appropriate, printing cannot be performed in appropriate density.



* The above figure shows a standard model.

Chapter 4

PARTS LIST

4-1 Mechanical Parts List

4-1-1 Drawing No. 1 Parts List & Location for AC Adapter Case

CD-S500 Series

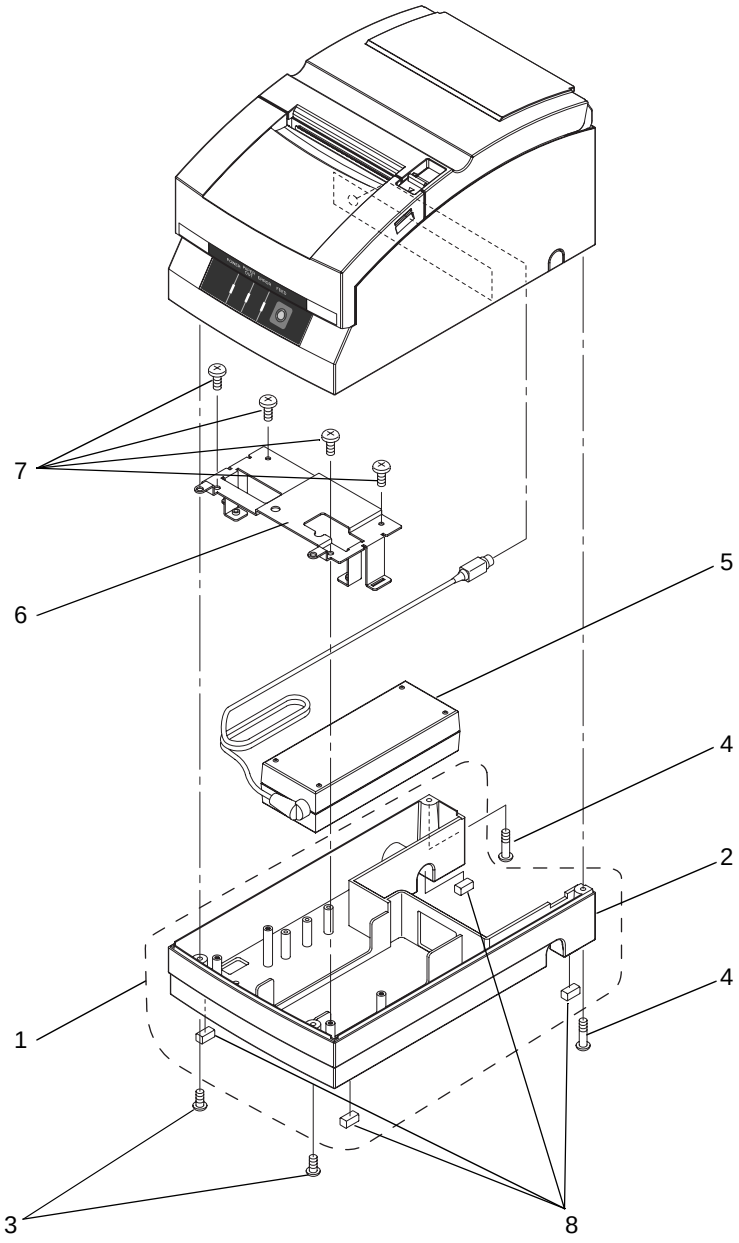
Drawing No. 1

Parts List & Location for AC Adapter Case

Revisions List		
Sheet No.	Rev. No.	Date
1/1	1	2004. 11. 1
1/1	2	2005. 5. 20

Drawing No. 1 AC Adapter Case

■ CD-S***S (Built-in AC adapter type)



Parts List for CD-S500 Series:
TITLE: AC Adapter Case Sheet No. 1/1
Drawing No. 1 Rev. No. 2

Location	Part No.	Part Name	Q'ty/Unit		Remark
			CD-S***A	CD-S***S	
1-1	NJ59701-0	SA, AC ADAPTER CASE W		1	White case Including 1-2, 1-8
	NJ59702-0	SA, AC ADAPTER CASE B		1	Black case Including 1-2, 1-8
1-2	NJ56211-0	CASE, AC ADAPTER W		1	White case
	NJ56219-0	CASE, AC ADAPTER B		1	Black case
1-3	E11130-080F	SCREW, PHT (ST), M3.0X8		2	
1-4	E10130-140F	SCREW, PHT (PT), M3.0X14		2	
1-5	NJ69901-0	UNIT, AC ADAPTER	1	1	
1-6	NJ54102-0	HANGER SUPPORT		1	
1-7	E12830-080DF	SCREW M3.0X8 P TITE BIND		4	
1-8	JM59902-0	LEG CASE L F		4	

* CD-S***A: AC adapter type

* CD-S***S: Built-in AC adapter type

4-1-2 Drawing No. 2 Parts List & Location for Rear Cover

CD-S500 Series

Drawing No. 2

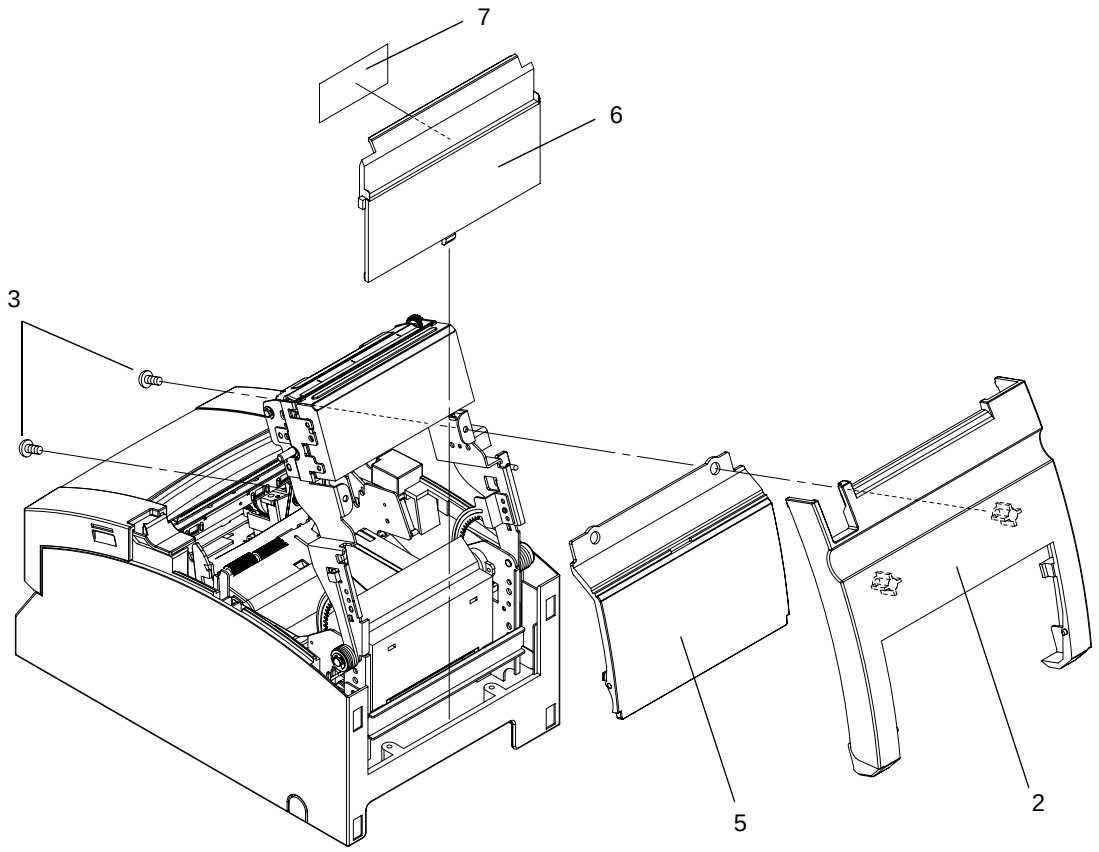
Parts List & Location for Rear Cover

Revisions List		
Sheet No.	Rev. No.	Date
1/1	1	2004. 11. 1
1/1	2	2005. 5. 20

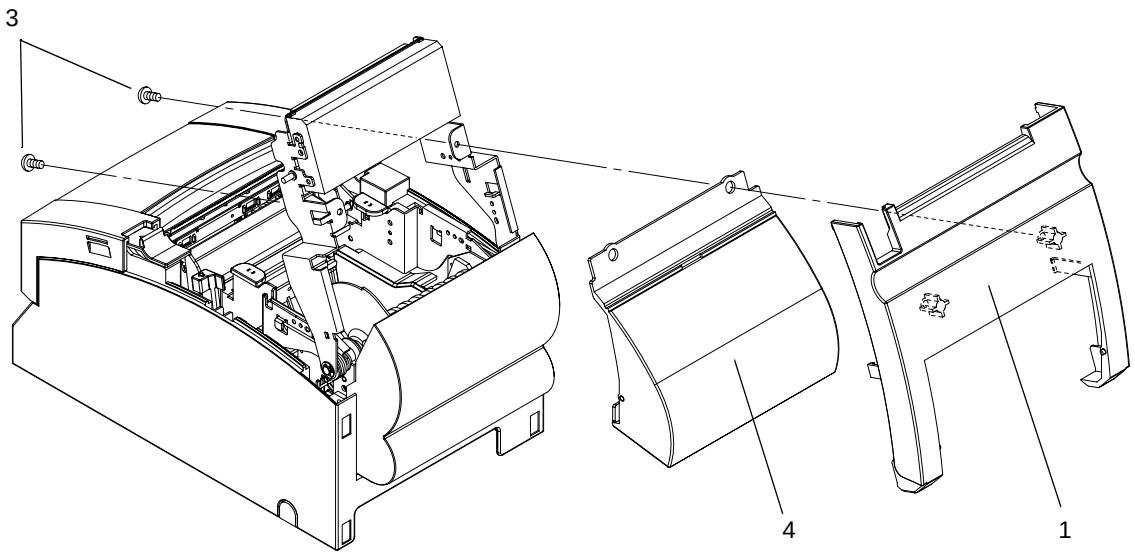
Drawing No. 2 Rear Cover

■ CD-S500 (Standard model)

■ CD-S501 (Built-in autocutter model)



■ CD-S503 (Rewinder model)



Parts List for CD-S500 Series:
TITLE: Rear Cover Sheet No. 1/1
Drawing No. 2 Rev. No. 2

Location	Part No.	Part Name	Q'ty/Unit		Remark
			CD-S500, 501	CD-S503	
2-1	NJ56203-0	COVER, REAR R W		1	White case
	NJ56214-0	COVER, REAR R B		1	Black case
2-2	NJ56204-0	COVER, REAR N W	1		White case
	NJ56215-0	COVER, REAR N B	1		Black case
2-3	E12830-080DF	SCREW M3.0X8 P TITE BIND	2	2	
2-4	NJ56205-0	WINDOW R		1	
2-5	NJ56206-0	WINDOW N	1		
2-6	NJ56209-0	PLATE, REAR W	1		White case
	NJ56218-0	PLATE, REAR B	1		Black case
2-7	NJ90902-0	LABEL, PAPER STD	1		

* CD-S500: Standard model
* CD-S501: Built-in autocutter model
* CD-S503: Rewinder model

4-1-3 Drawing No. 3 Parts List & Location for Overall Cover

CD-S500 Series

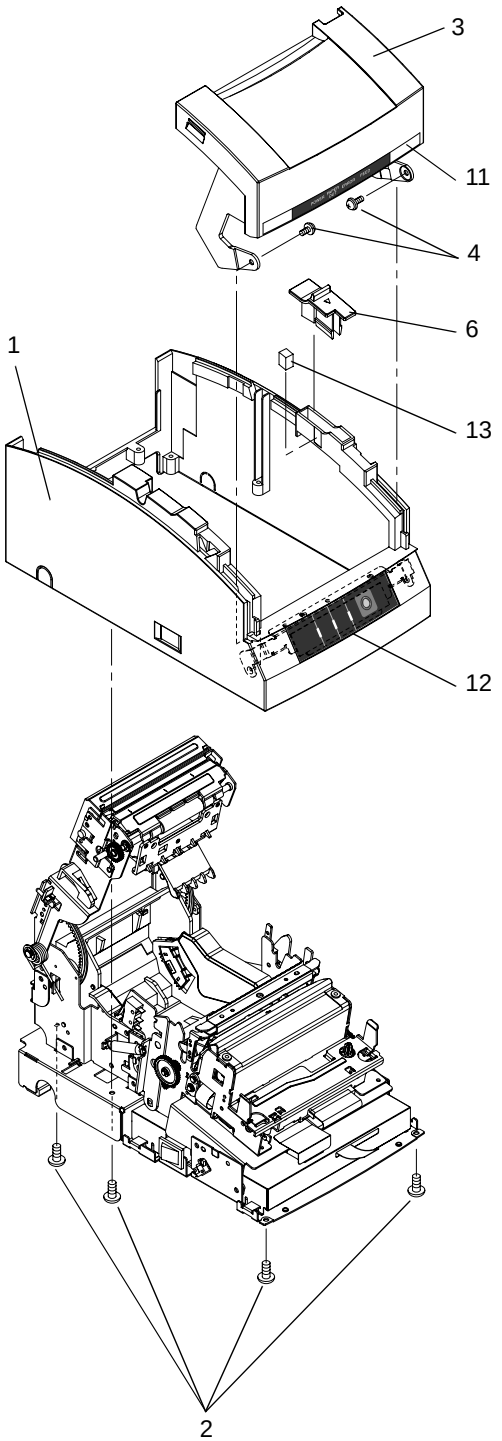
Drawing No. 3

Parts List & Location for Overall Cover

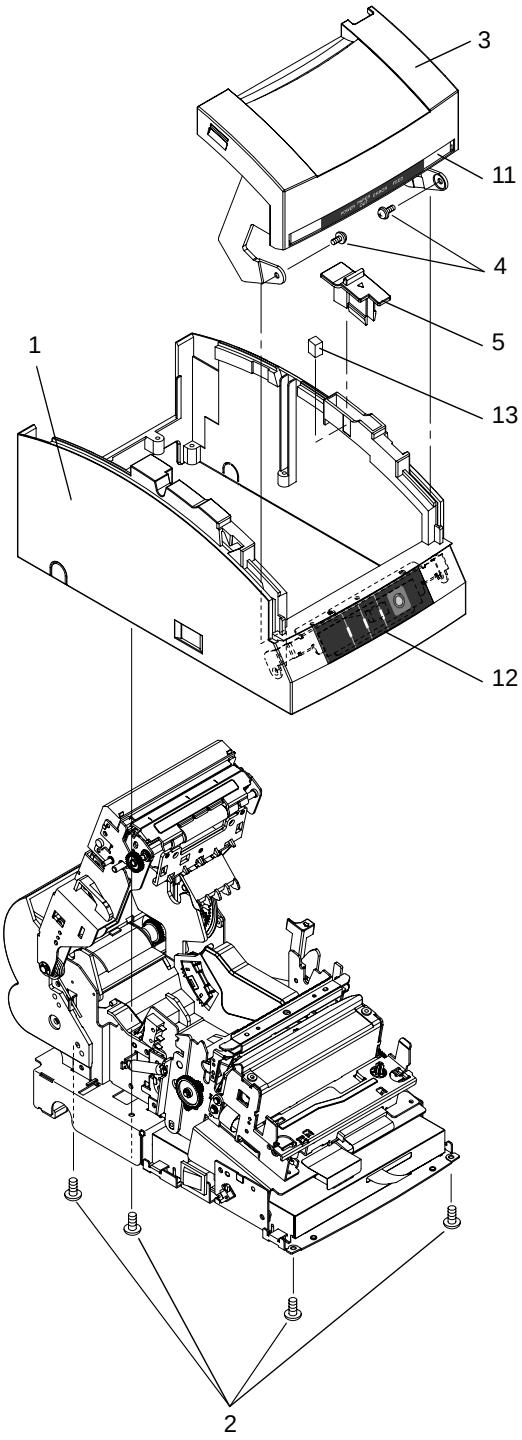
Revisions List		
Sheet No.	Rev. No.	Date
1/1	1	2004. 11. 1
1/1	2	2005. 5. 20

Drawing No. 3 Overall Cover

■ CD-S500 (Standard model)
■ CD-S501 (Built-in autocutter model)



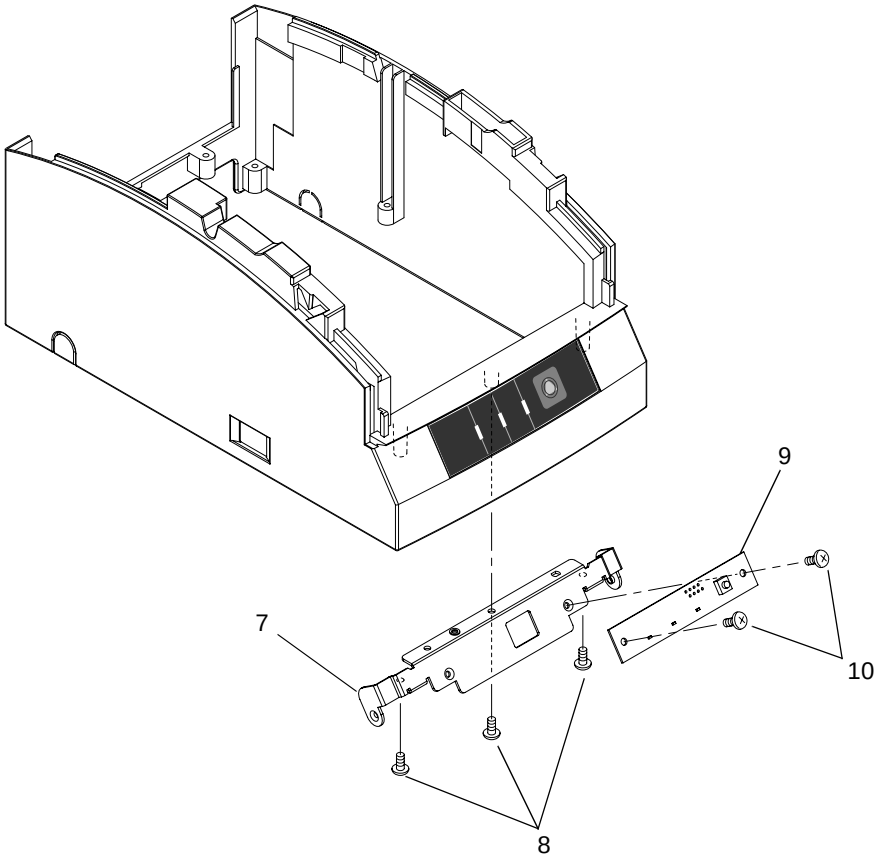
■ CD-S503 (Rewinder model)



■ CD-S500 (Standard model)

■ CD-S501 (Built-in autocutter model)

■ CD-S503 (Rewinder model)



Parts List for CD-S500 Series:
TITLE: Overall Cover Sheet No. 1/1
Drawing No. 3 Rev. No. 2

Location	Part No.	Part Name	Q'ty/Unit		Remark
			CD-S500, 501	CD-S503	
3-1	NJ56201-0	CASE U W	1	1	White case
	NJ56212-0	CASE U B	1	1	Black case
3-2	E12830-080DF	SCREW M3.0X8 P TITE BIND	6	6	
3-3	NJ56701-0	SA, COVER, FRONT W	1	1	White case
	NJ56702-0	SA, COVER, FRONT B	1	1	Black case
3-4	E00930-050F	SCREW PH (SW+PW) M3.0X5	2	2	
3-5	NJ56207-0	KNOB R		1	
3-6	NJ56208-0	KNOB N	1		
3-7	NJ54101-0	PLATE, OPE-PANE	1	1	
3-8	E12830-080DF	SCREW M3.0X8 P TITE BIND	3	3	
3-9	NJ66730-0	SA, OPE-PANE PCB	1	1	
3-10	E00530-050F	SCREW M3.0X5 BIND	2	2	
3-11	NJ54104-0	SHEET, LABEL	1	1	
3-12	NJ54103-0	SHEET, OPE-PANE	1	1	
3-13	NJ59901-0	STOPPER, CASE U	1	1	

* CD-S500: Standard model
* CD-S501: Built-in autocutter model
* CD-S503: Rewinder model

4-1-4 Drawing No. 4 Parts List & Location for Mechanism Unit

CD-S500 Series

Drawing No. 4

Parts List & Location for Mechanism Unit

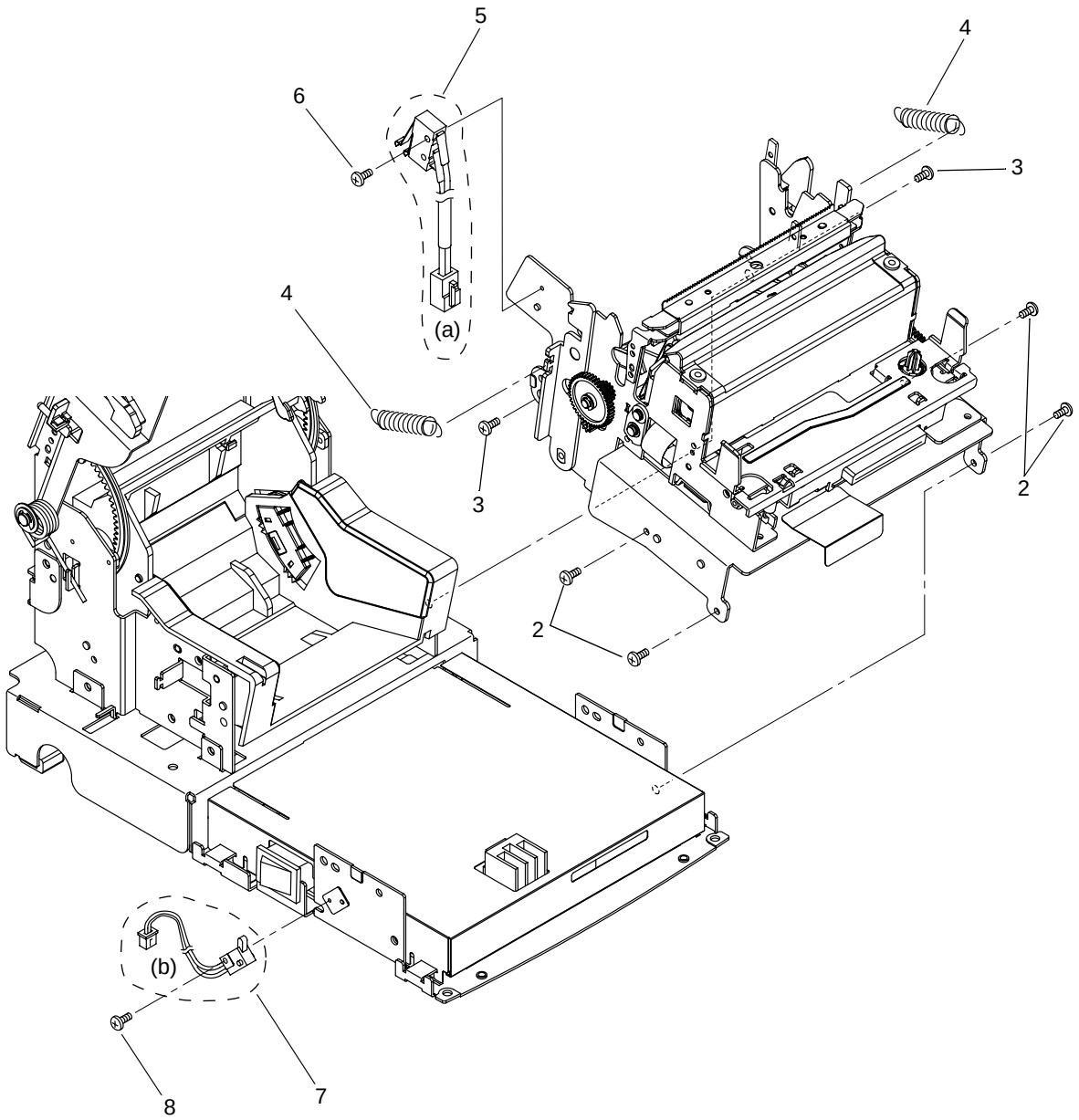
Revisions List		
Sheet No.	Rev. No.	Date
1/1	1	2004. 11. 1
1/1	2	2005. 5. 20

Drawing No. 4 Mechanism Unit

■ CD-S500 (Standard model)

■ CD-S501 (Built-in autocutter model)

■ CD-S503 (Rewinder model)

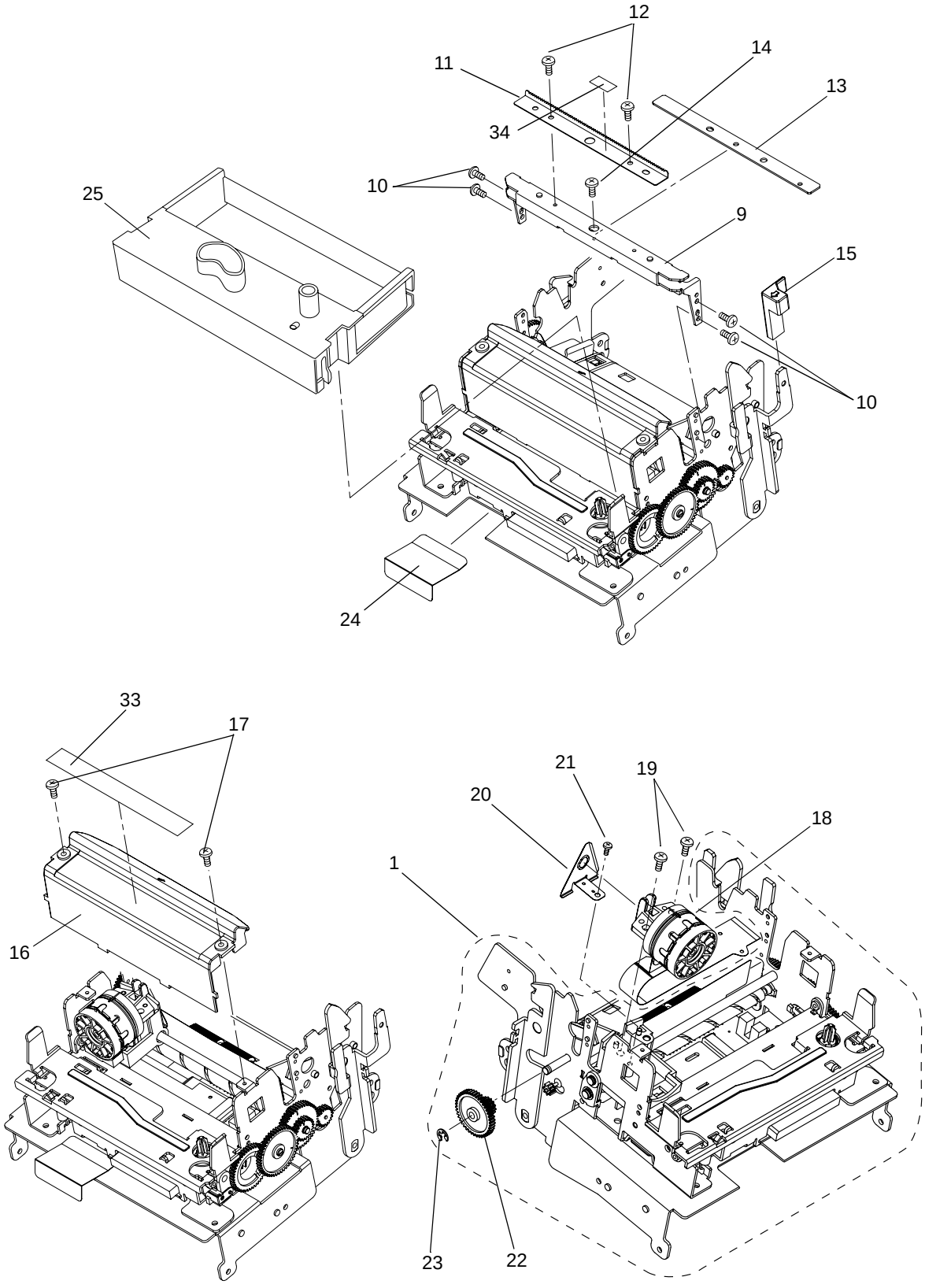


* Refer to Page 4-17 for connections of connectors (a) and (b).

■ CD-S500 (Standard model)

■ CD-S501 (Built-in autocutter model)

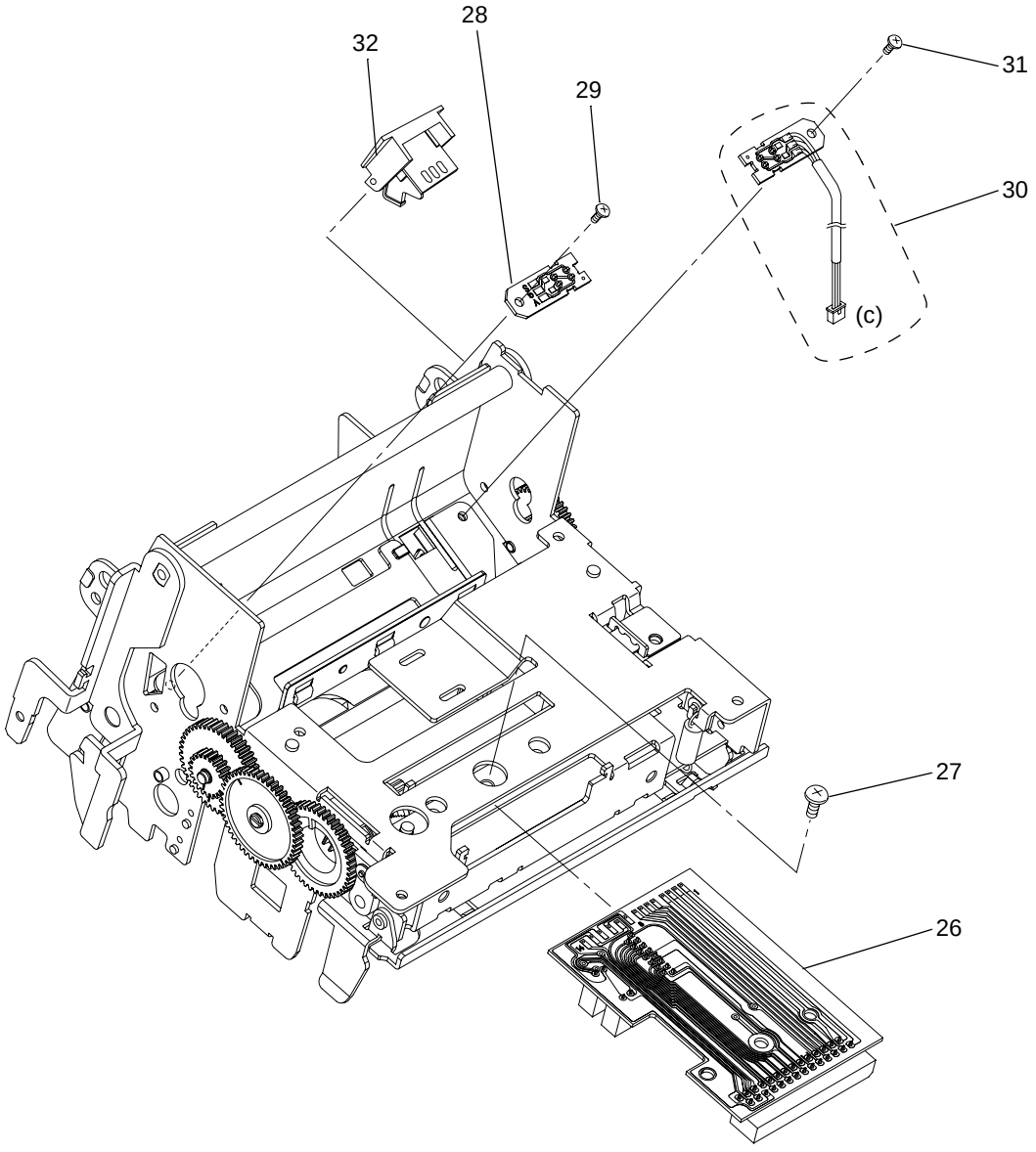
■ CD-S503 (Rewinder model)



■ CD-S500 (Standard model)

■ CD-S501 (Built-in autocutter model)

■ CD-S503 (Rewinder model)



* Refer to Page 4-17 for connections of connector (c).

Parts List for CD-S500 Series:
TITLE: Mechanism Unit Sheet No. 1/1
Drawing No. 4 Rev. No. 2

Location	Part No.	Part Name	Q'ty/Unit			Remark
			CD-S500	CD-S501	CD-S503	
4-1	NJ19801-0	UNIT, MECHANISM	1	1	1	
4-2	E00530-050F	SCREW M3.0X5 BIND	4	4	4	
4-3	E00540-060F	SCREW M4.0X6 BIND	2	2	2	
4-4	NJ43604-0	SPRING, LEVER	2	2	2	
4-5	NJ68705-0	SA, REAR COVER SW	1	1	1	
4-6	E00520-075F	SCREW M2.0X7.5 BIND	1	1	1	
4-7	NJ68710-0	SA, FRONT COVER SW	1	1	1	
4-8	E03717-060F	SCREW M1.7X6 (#0)	1	1	1	
4-9	NJ44113-0	PLATE, CUTTER	1	1	1	
4-10	E01420-025F	SCREW M2.0X2.5 (#0)	4	4	4	
4-11	NJ44116-0	CUTTER, MANUAL	1	1	1	
4-12	E01420-025F	SCREW M2.0X2.5 (#0)	2	2	2	
4-13	NJ44115-0	BLADE, LOWER		1	1	Included in 6-17
4-14	E01420-025F	SCREW M2.0X2.5 (#0)		1	1	
4-15	NJ44201-0	COVER, LEVER			1	
4-16	NJ54201-0	COVER, HEAD	1	1	1	
4-17	E00520-040F	SCREW M2.0X4 BIND	2	2	2	
4-18	NJ09701-0	SA PRINT HEAD	1	1	1	
4-19	E12830-080DF	SCREW M3.0X8 P TITE BIND	2	2	2	
4-20	NH34104-0	MASK, RIBBON	1	1	1	
4-21	E13717-040WF	SCREW, M1.7X4 (#0) B TITE	1	1	1	
4-22	NJ20202-0	GEAR, PF 1ST	1	1	1	
4-23	E60325-000F	E-RING, 2.5	1	1	1	
4-24	NJ64902-0	COVER, HEATSINK	1	1	1	
4-25	NJ37701-0	CASSETTE, RIBBON<P>	1	1	1	
	NJ37702-0	CASSETTE, RIBBON<B/R>	1	1	1	
	NJ37703-0	CASSETTE, RIBBON<B>	1	1	1	
4-26	NH66705-0	SA, MAIN PCB WITHOUT VR	1	1	1	
4-27	E11130-050F	SCREW, PHT (ST), M3.0X5	1	1	1	
4-28	NH66702-0	SA, SENSOR PCB	1	1	1	Photo sensor switch type 4-32 not used
4-29	E00520-040F	SCREW M2.0X4 BIND	1	1	1	Included in 4-1
4-30	NJ68716-0	SA, BM SENSOR PCB	1	1	1	
4-31	E00520-040F	SCREW M2.0X4 BIND	1	1	1	Included in 4-1
4-32	NJ24701-0	SA, PE SENSOR HOLDER	1	1	1	Mechanical switch type (Subsitute for 4-28) 4-28/4-29 not used
4-33	NJ90904-0	LABEL, RIBBON	1	1	1	
4-34	NJ90909-0	LABEL, CUTTER CAUTION	1	1	1	

* CD-S500: Standard model

* CD-S501: Built-in autocutter model

* CD-S503: Rewinder model

4-1-5 Drawing No. 5 Parts List & Location for Main PCB

CD-S500 Series

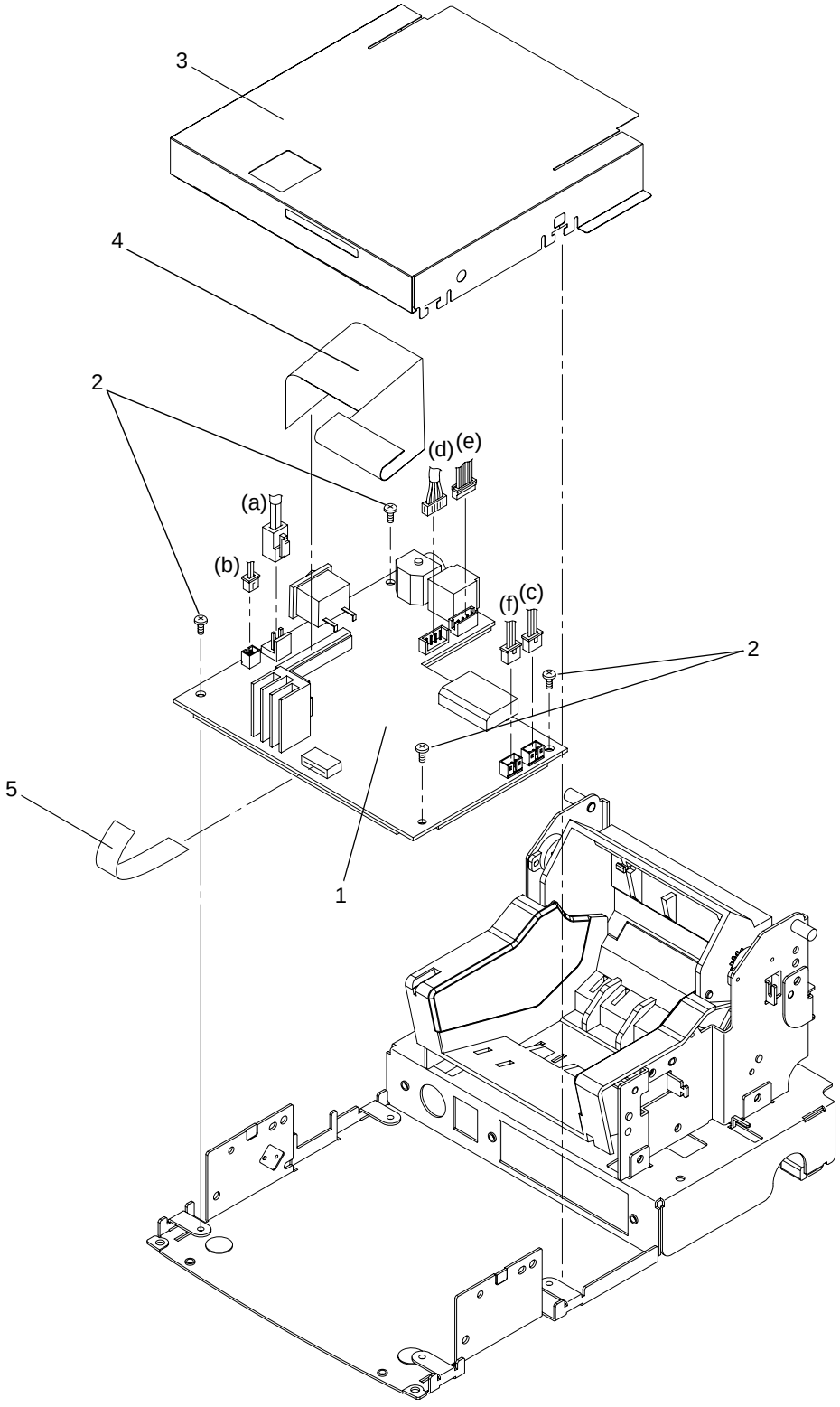
Drawing No. 5

Parts List & Location for Main PCB

Revisions List		
Sheet No.	Rev. No.	Date
1/1	1	2004. 11. 1
1/1	2	2005. 5. 20

Drawing No. 5 Main PCB

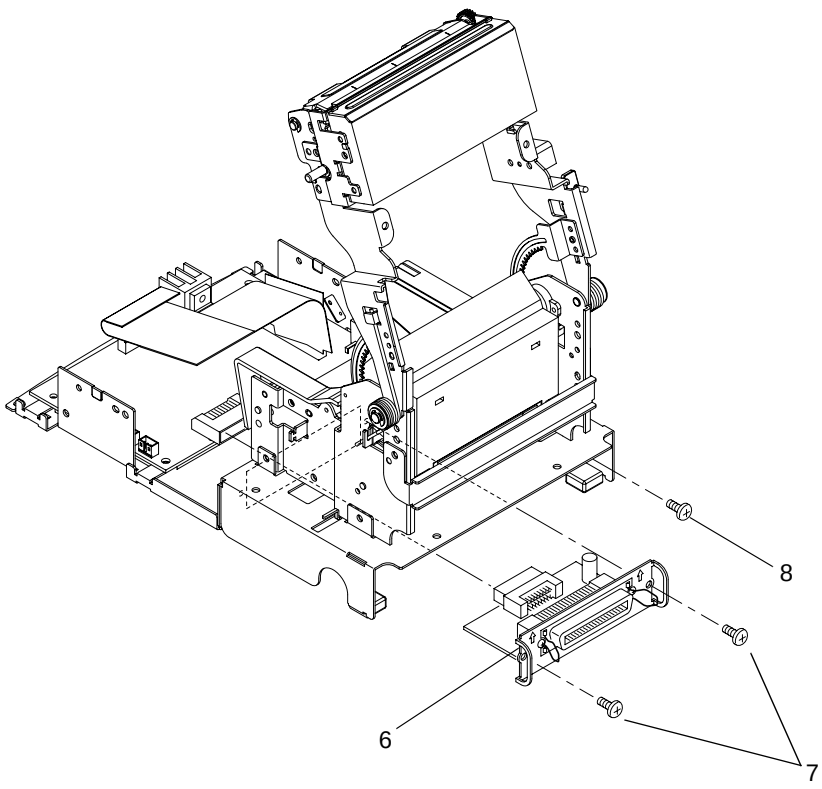
■ CD-S500 (Standard model)
■ CD-S501 (Built-in autocutter model)
■ CD-S503 (Rewinder model)



■ CD-S500 (Standard model)

■ CD-S501 (Built-in autocutter model)

■ CD-S503 (Rewinder model)



Parts List for CD-S500 Series:
TITLE: Main PCB Sheet No. 1/1
Drawing No. 5 Rev. No. 2

Location	Part No.	Part Name	Q'ty/Unit			Remark
			CD-S500	CD-S501	CD-S503	
5-1	NJ66820-0	UNIT, MAIN PCB (WITH ROM)	1			
	NJ66810-0	UNIT, MAIN PCB AC (WITH ROM)		1		
	NJ66800-0	UNIT, MAIN PCB AC+RW (WITH ROM)			1	
	NJ66834-0	UNIT, MAIN PCB CHN (WITH ROM)	1			
	NJ66832-0	UNIT, MAIN PCB AC CHN (WITH ROM)		1		
	NJ66830-0	UNIT, MAIN PCB A+R CH (WITH ROM)			1	
5-2	E00530-050F	SCREW M3.0X5 BIND	4	4	4	
5-3	NJ64901-0	COVER, PCB	1	1	1	
5-4	NJ67900-0	FFC, MAIN	1	1	1	
5-5	NJ67905-0	FFC, OPE-PANE	1	1	1	
5-6	NJ66745-0	SA, SERIAL I/F PCB (MM) CHN/JPN	1	1	1	SERIAL I/F metric spec.
	NJ66746-0	SA, SERIAL I/F PCB (INCH) OTERS	1	1	1	SERIAL I/F inch spec.
	NJ66750-0	SA, PARALLEL I/F PCB	1	1	1	PARALLEL I/F spec.
	NJ66760-0	SA, USB I/F PCB	1	1	1	USB I/F inch spec.
5-7	E00530-050F	SCREW M3.0X5 BIND	2	2	2	
5-8	E00830-060F	SCREW, PH (EXT. TW) M3X6	1	1	1	

* CD-S500: Standard model
* CD-S501: Built-in autocutter model
* CD-S503: Rewinder model

4-1-6 Drawing No. 6 Parts List & Location for Base Frame

CD-S500 Series

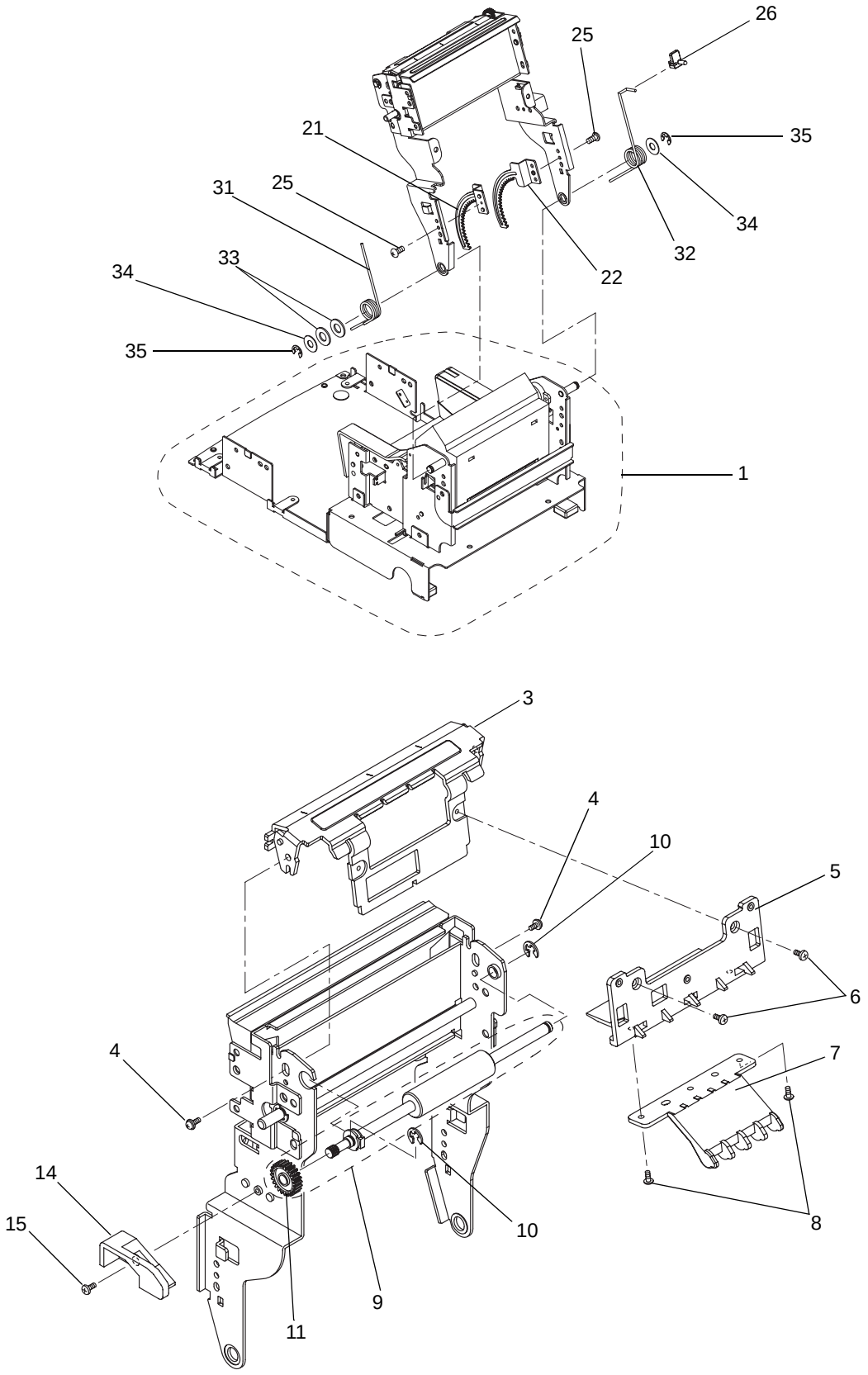
Drawing No. 6

Parts List & Location for Base Frame

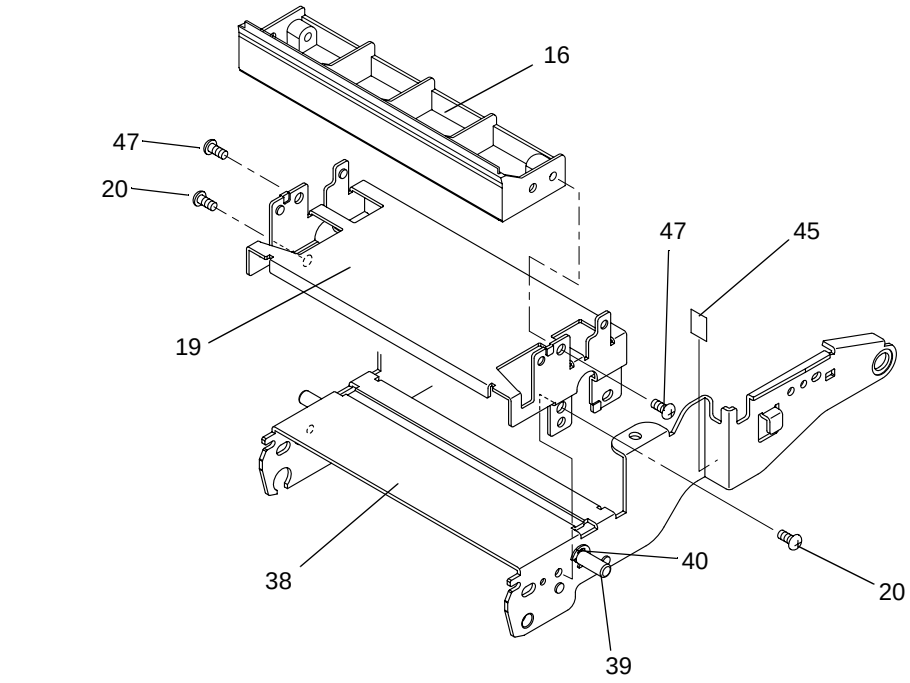
Revisions List		
Sheet No.	Rev. No.	Date
1/1	1	2004. 11. 1
1/2	2	2005. 5. 20
2/2	2	2005. 5. 20

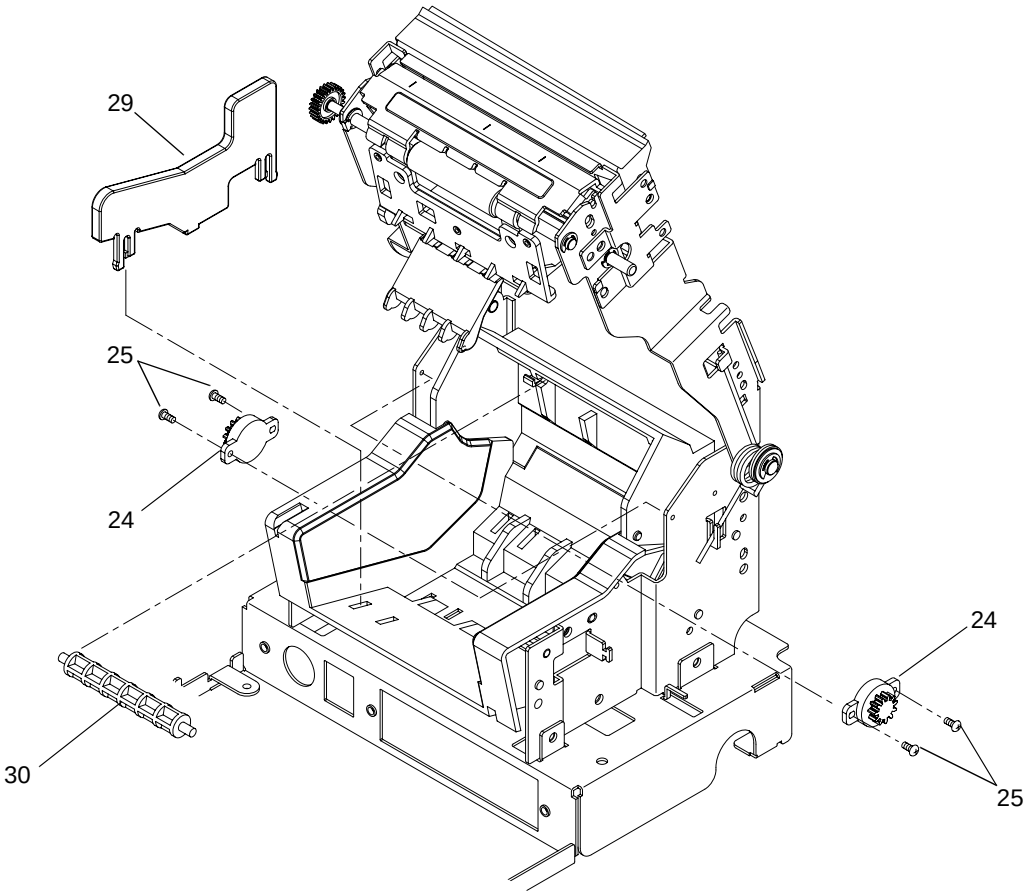
Drawing No. 6 Base Frame

■ CD-S500 (Standard model)

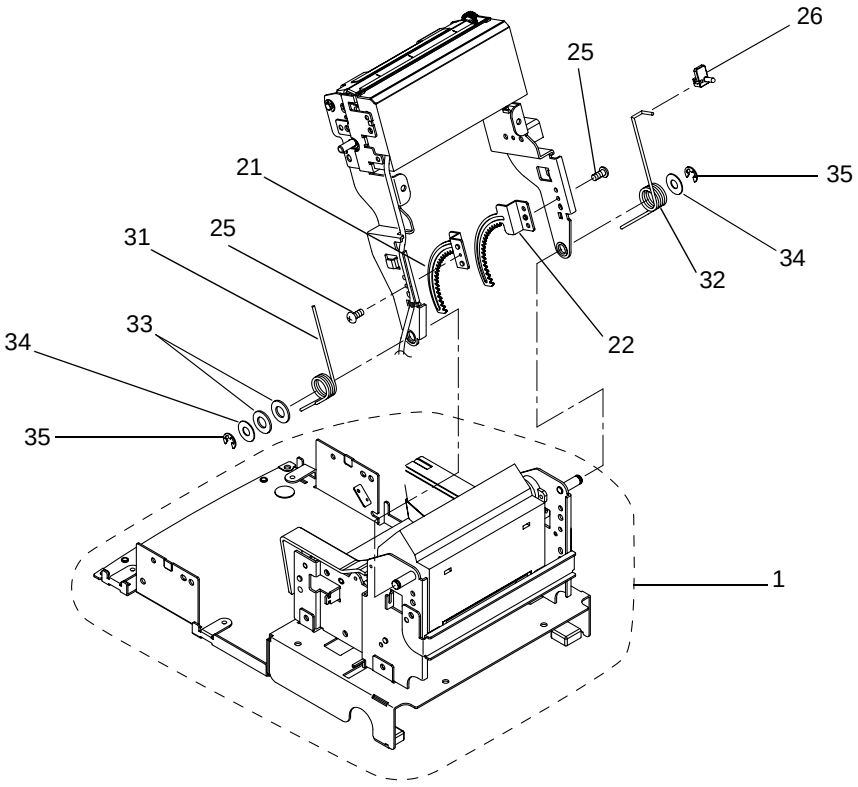


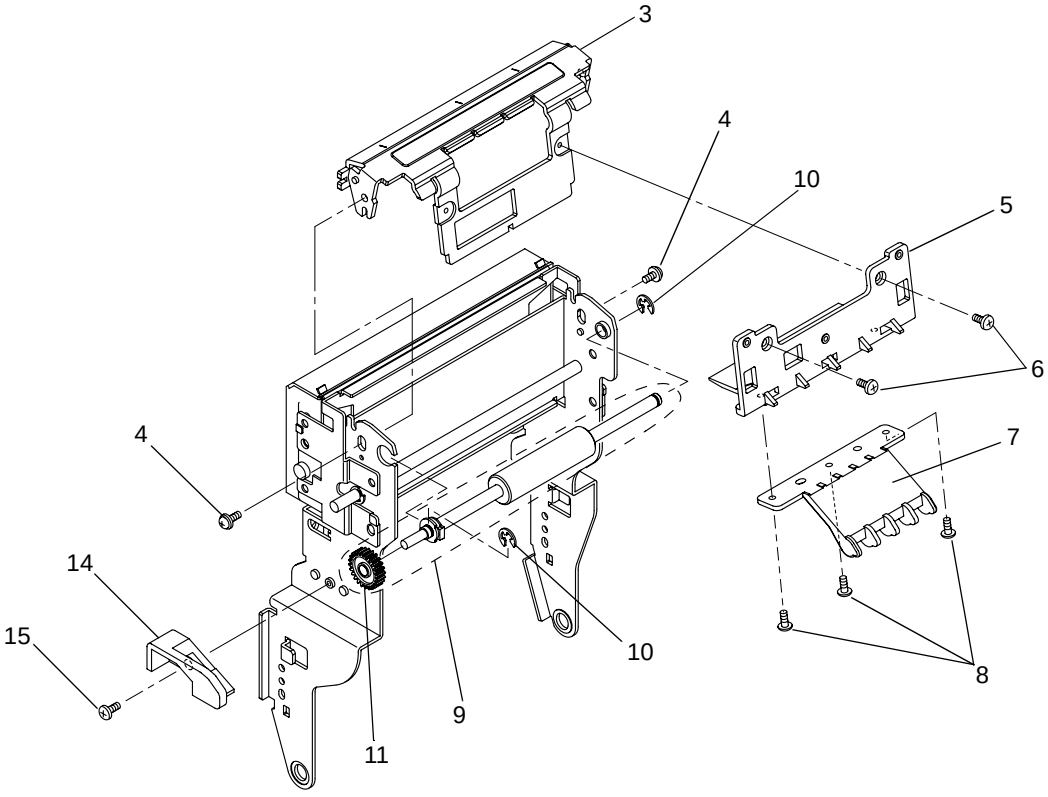
■ CD-S500 (Standard model)



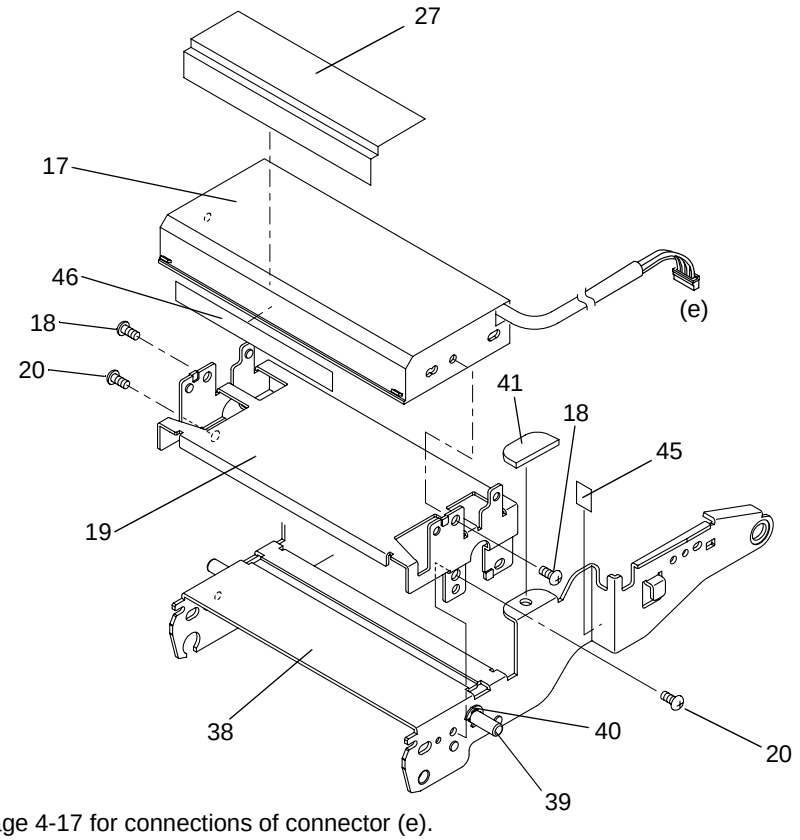


■ CD-S501 (Built-in autocutter model)

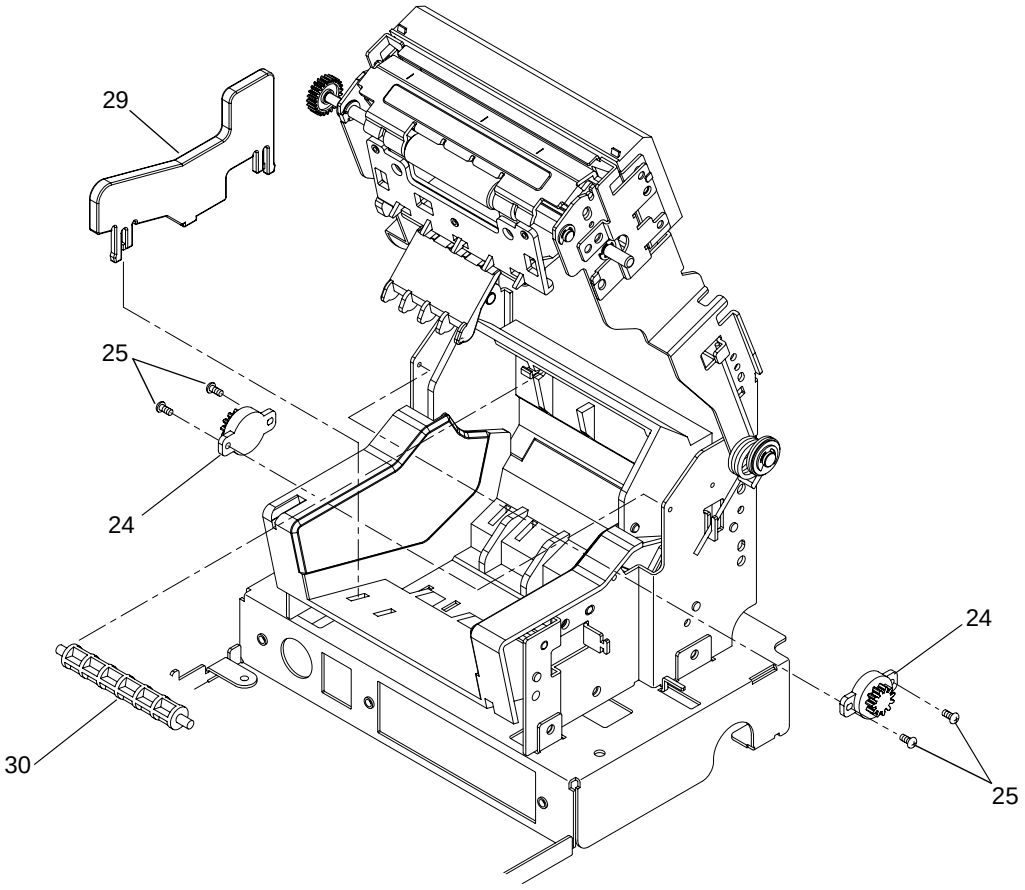




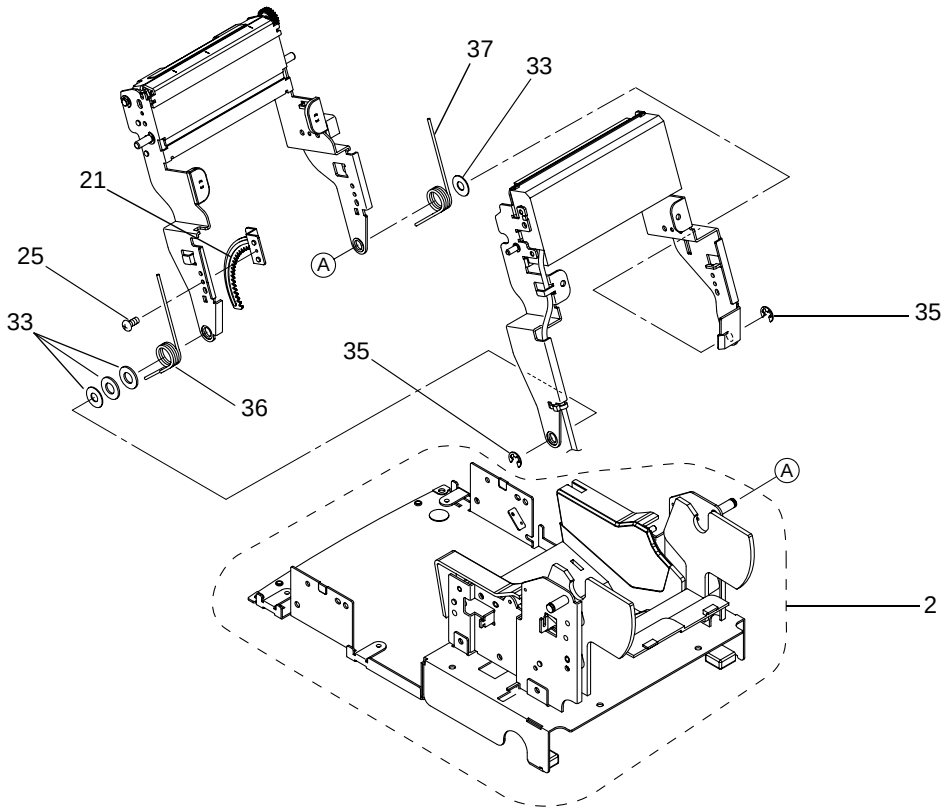
■ CD-S501 (Built-in autocutter model)

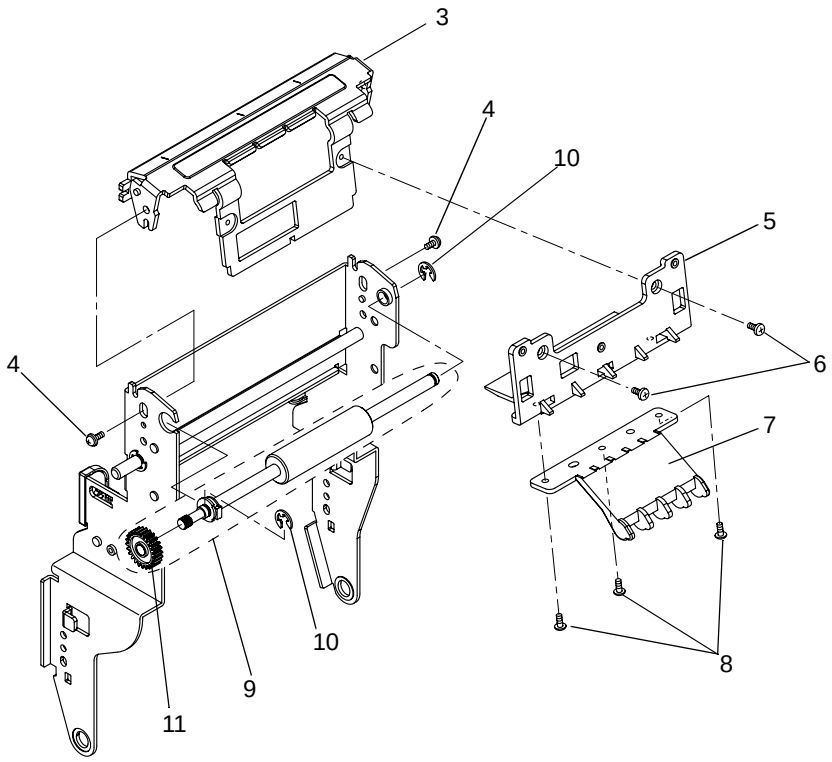


* Refer to Page 4-17 for connections of connector (e).

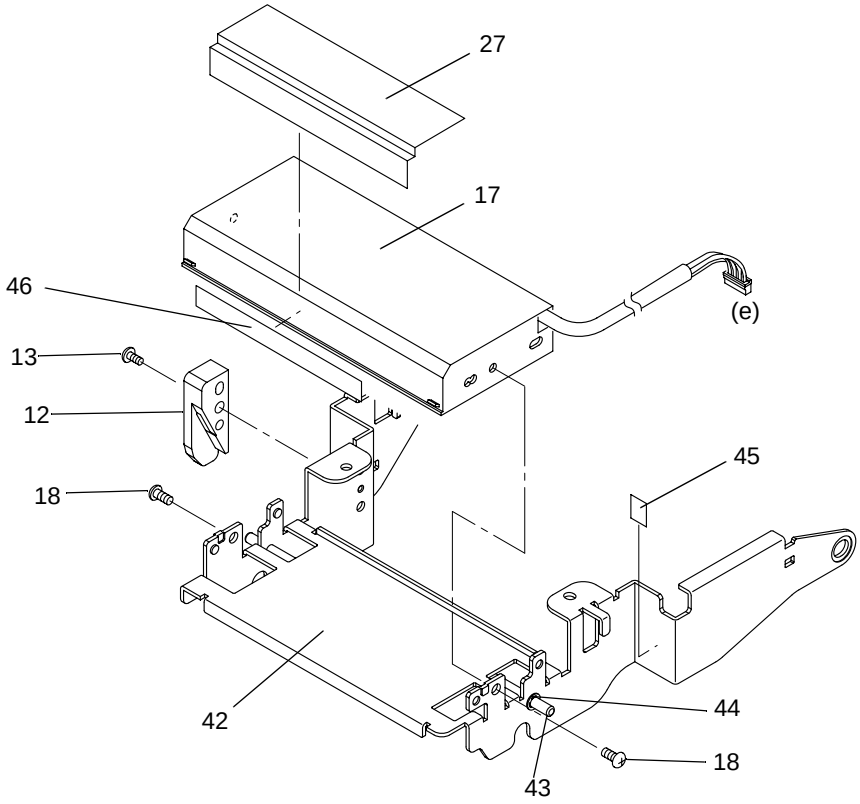


■ CD-S503 (Rewinder model)

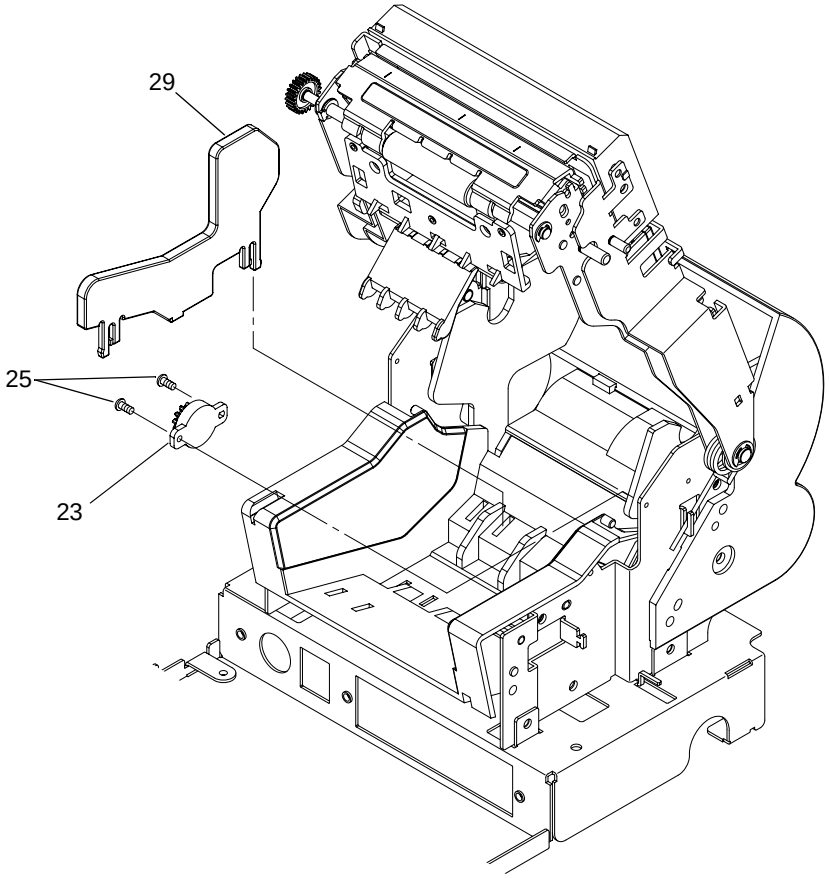




■ CD-S503 (Rewinder model)



* Refer to Page 4-17 for connections of connector (e).



Parts List for CD-S500 Series:
TITLE: Base Frame Sheet No. 1/2
Drawing No. 6 Rev. No. 2

Location	Part No.	Part Name	Q'ty/Unit			Remark
			CD-S500	CD-S501	CD-S503	
6-1	NJ49801-0	UNIT, BASE FRAME STD	1	1		
6-2	NJ49802-0	UNIT, BASE FRAME RWD			1	
6-3	NJ24702-1	SA, PLATEN	1	1	1	
6-4	E00930-060F	SCREW, PH (SW+PW), M3.0X6	2	2	2	
6-5	NJ28201-0	COVER, PLATEN	1	1	1	
6-6	E00520-040F	SCREW M2.0X4 BIND	2	2	2	
6-7	NJ24207-0	GUIDE, PAPER	1	1	1	
6-8	E13717-060F	SCREW, M1.7X6.0 (#0) B TITE	3	3	3	
6-9	NJ22702-0	SA1, PF SHAFT	1	1	1	
6-10	E60330-000F	E-RING, 3	2	2	2	
6-11	NJ20203-0	GEAR, PF SHAFT	1	1	1	
6-12	NJ46201-0	ARMATURE, SW 1			1	
6-13	E00520-040F	SCREW M2.0X4 BIND			1	
6-14	NJ46202-0	ARMATURE, SW 2	1	1		
6-15	E00520-040F	SCREW M2.0X4 BIND	1	1		
6-16	NJ44204-0	DUMMY, CUTTER	1			
6-17	NJ29901-0	CUTTER, AUTO		1	1	
6-18	E11130-050F	SCREW, PHT (ST), M3.0X5		2	2	
6-19	NJ44112-0	PLATE, AUTO CUTTER	1	1		
6-20	E11130-050F	SCREW, PHT (ST), M3.0X5	2	2		
6-21	NJ44109-0	PLATE, SECTOR GEAR 1	1	1	1	
6-22	NJ44110-0	PLATE, SECTOR GEAR 2	1	1		
6-23	NJ40901-0	GEAR, DAMPER C			1	
6-24	NJ40902-0	GEAR, DAMPER E	2	2		
6-25	E00520-040F	SCREW M2.0X4 BIND	6	6	3	
6-26	NJ44203-0	CAP, SPRING	1	1		
6-27	NJ54105-0	SHEET, AUTO CUTTER		1	1	
6-28	NJ22201-0	PLATE, PARTITION 1			1	
6-29	NJ22202-0	PLATE, PARTITION 2	1	1		
6-30	NJ22203-0	ROLLER, ASSIST	1	1		
6-31	NJ43601-0	SPRING, CHASSIS PLATEN R1	1	1		
6-32	NJ43602-0	SPRING, CHASSIS PLATEN L	1	1		
6-33	NJ44121-0	WASHER	2	2	4	
6-34	E50160-110F	WASHER, PLAIN	2	2		
6-35	E60340-000F	E-RING, 4	2	2	2	
6-36	NJ43605-0	SPRING, CHASSIS PLATEN R2			1	
6-37	NJ43603-0	SPRING, CHASSIS CUTTER			1	
6-38	NJ24101-0	CHASSIS, PLATEN	1	1	1	
6-39	NJ42001-0	SHAFT, CHASSIS PLATEN	1	1	1	

* CD-S500: Standard model
* CD-S501: Built-in autocutter model
* CD-S503: Rewinder model

Parts List for CD-S500 Series:
TITLE: Base Frame Sheet No. 2/2
Drawing No. 6 Rev. No. 2

Location	Part No.	Part Name	Q'ty/Unit			Remark
			CD-S500	CD-S501	CD-S503	
6-40	E60330-000F	E-RING, 3	2	2	2	
6-41	NJ24703-0	SA, CHASSIS PLATEN CAP			2	
6-42	NJ44106-0	CHASSIS, CUTTER			1	
6-43	NJ42002-0	SHAFT, CHASSIS CUTTER			1	
6-44	E60320-000F	E-RING, 2			2	
6-45	NJ90908-0	LABEL, CATCHING CAUTION	1	1	1	
6-46	NJ90907-0	LABEL, AUTO CUTTER CAUTION		1	1	
6-47	E12830-080DF	SCREW, M3.0X8 P TITE BIND	2			

* CD-S500: Standard model
* CD-S501: Built-in autocutter model
* CD-S503: Rewinder model

4-1-7 Drawing No. 7 Parts List & Location for Rewinder

CD-S500 Series

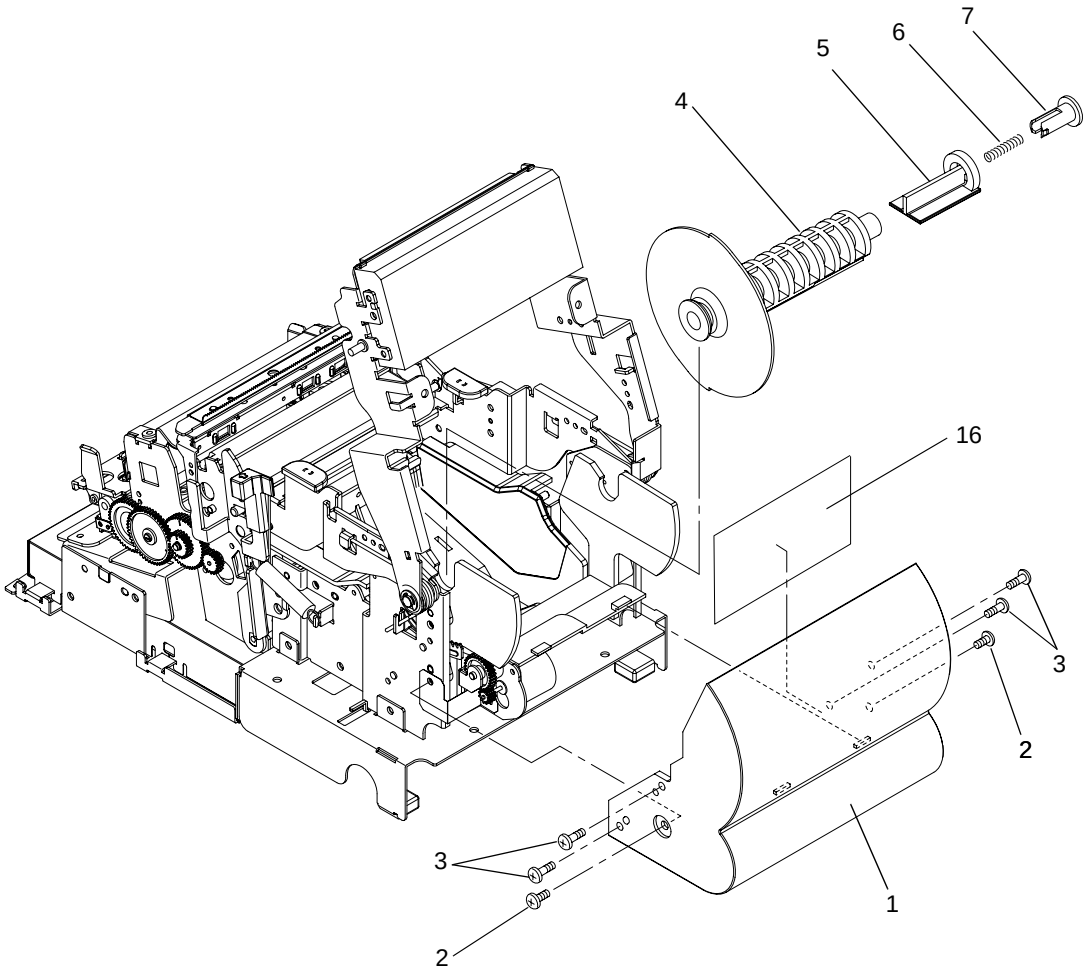
Drawing No. 7

Parts List & Location for Rewinder

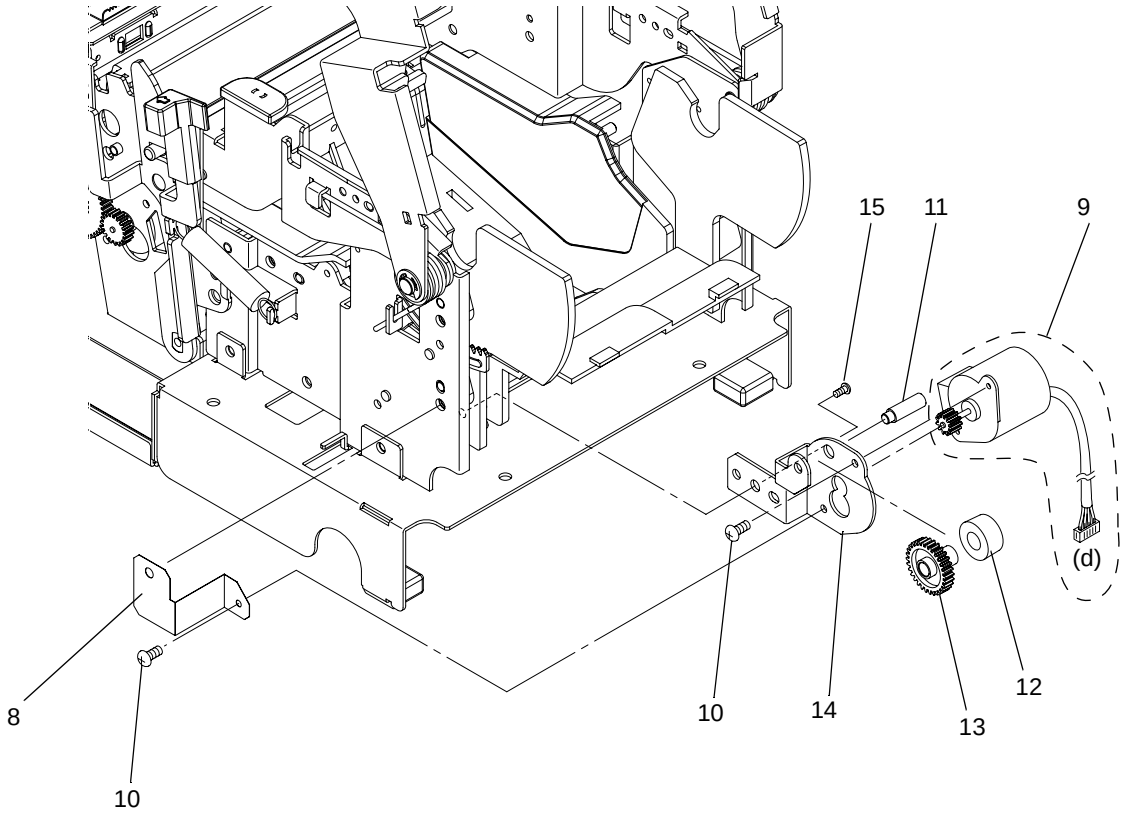
Revisions List		
Sheet No.	Rev. No.	Date
1/1	1	2004. 11. 1
1/1	2	2005. 5. 20

Drawing No. 7 Rewinder

■ CD-S503 (Rewinder model)



■ CD-S503 (Rewinder model)



* Refer to Page 4-17 for connections of connector (d).

Parts List for CD-S500 Series:
TITLE: Rewinder Sheet No. 1/1
Drawing No. 7 Rev. No. 2

Location	Part No.	Part Name	Q'ty/Unit		Remark
			CD-S500, 501	CD-S503	
7-1	NJ58201-0	CASE, REWINDER W		1	White case
	NJ58202-0	CASE, REWINDER B		1	Black case
7-2	E12830-080DF	SCREW, M3.0X8 P TITE BIND		2	
7-3	E00530-050F	SCREW M3.0X5 BIND		4	
7-4	NJ27201-1	REWINDER		1	
7-5	NJ27202-0	SLIDER		1	
7-6	NJ23601-0	SPRING, REWINDER		1	
7-7	NJ27203-0	STOPPER, REWINDER		1	
7-8	NJ44901-0	SHEET, GND		1	
7-9	NJ25702-0	SA, REWINDER MOTOR		1	
7-10	E01420-025F	SCREW M2.0X2.5 (#0)		2	
7-11	NJ22003-0	PIN, ROLLER REWINDER		1	
7-12	NJ22502-1	ROLLER, REWINDER		1	
7-13	NJ20201-0	GEAR, REWINDER		1	
7-14	NJ24104-0	FRAME, REWINDER MOTOR		1	
7-15	E01420-025F	SCREW M2.0X2.5 (#0)		1	
7-16	NJ90903-0	LABEL, PAPER REWINDER		1	

* CD-S500: Standard model
* CD-S501: Built-in autocutter model
* CD-S503: Rewinder model

4-1-8 Drawing No. 8 Parts List & Location for Paper Near End Sensor

CD-S500 Series

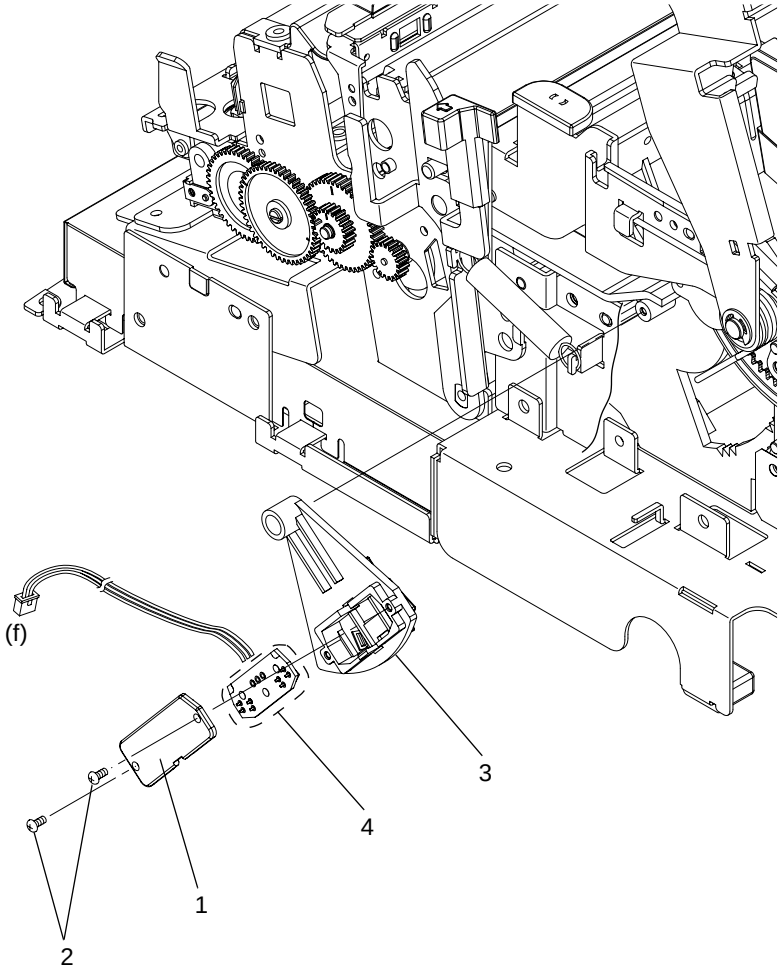
Drawing No. 8

Parts List & Location for Paper Near End Sensor

Revisions List		
Sheet No.	Rev. No.	Date
1/1	1	2004. 11. 1
1/1	2	2005. 5. 20

Drawing No. 8 Paper Near End Sensor

- CD-S500 (Standard model)
- CD-S501 (Built-in autocutter model)
- CD-S503 (Rewinder model)



* Refer to Page 4-17 for connections of connector (f).

Parts List for CD-S500 Series:
TITLE: Paper Near End Sensor Sheet No. 1/1
Drawing No. 8 Rev. No. 2

Location	Part No.	Part Name	Q'ty/Unit		Remarks
			CD-S500, 501	CD-S503	
8-1	NJ14203-0	HOLDER, NE SENSOR A	1	1	
8-2	E13717-040WF	SCREW, M1.7X4.0 (#0) B TITE	2	2	
8-3	NJ14204-0	HOLDER, NE SENSOR B	1	1	
8-4	NJ68700-0	SA, PNE SENSOR	1	1	

* CD-S500: Standard model
* CD-S501: Built-in autocutter model
* CD-S503: Rewinder model

4-2 Electric Parts List

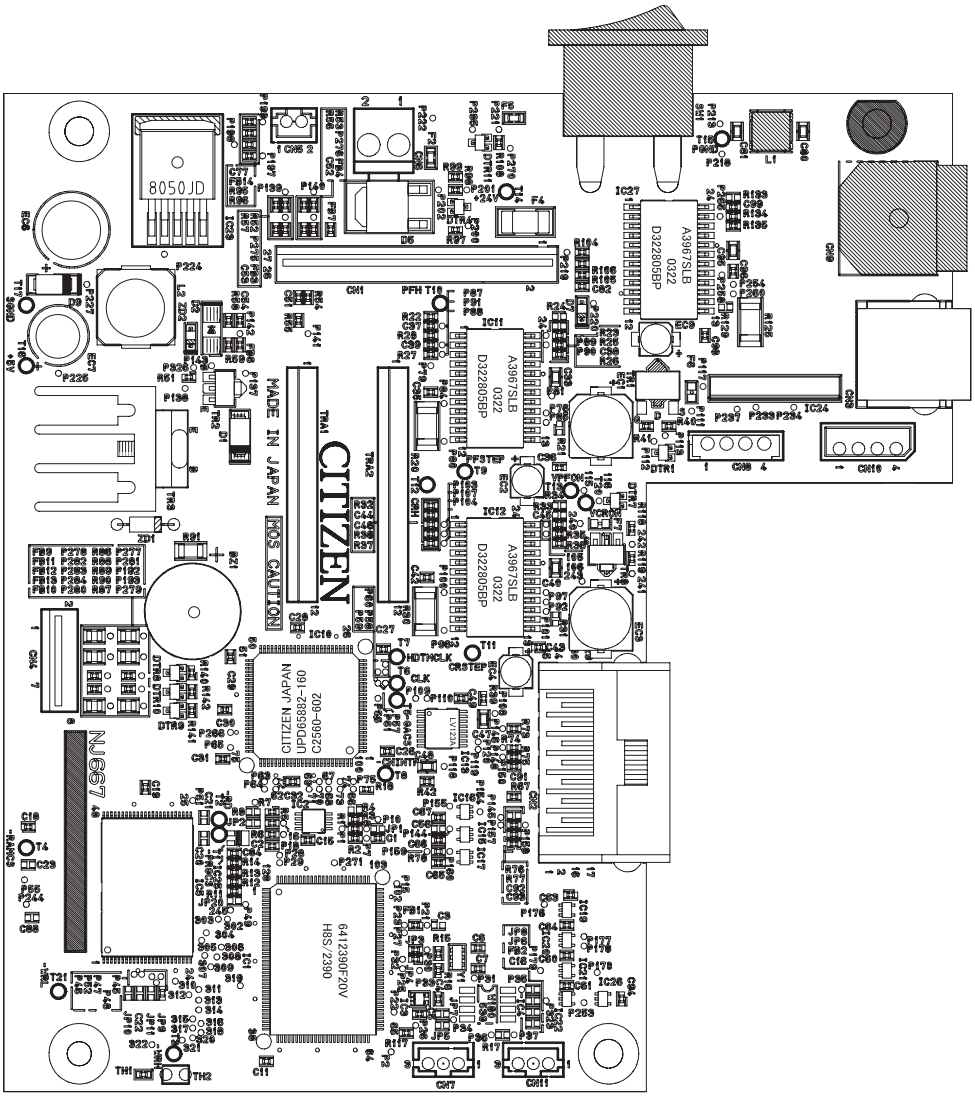
4-2-1 Parts List & Location for Unit, Main PCB

Parts List & Location for Unit, Main PCB AC + RW (WITH ROM)

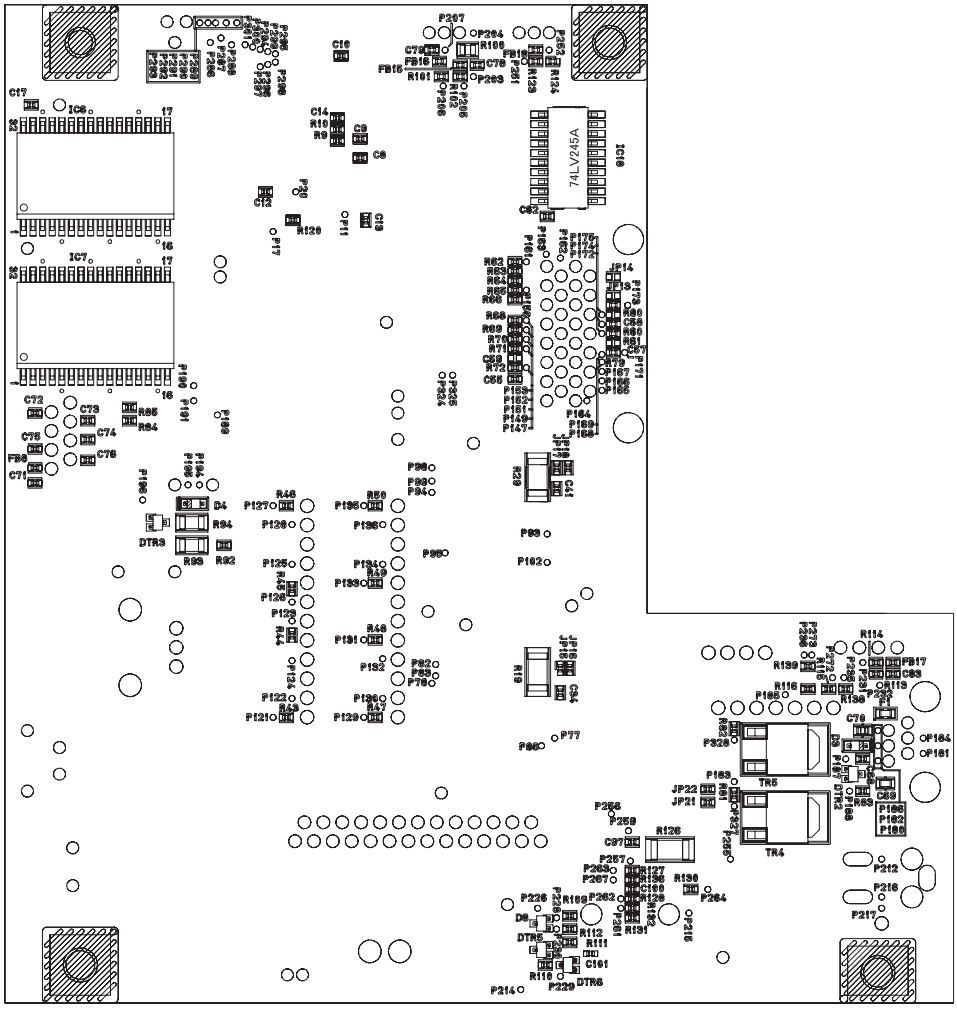
Revision Up List		
Sheet No.	Rev. No.	Date
1/5	1	2004. 12. 1
2/5	1	2004. 12. 1
3/5	1	2004. 12. 1
4/5	1	2004. 12. 1
5/5	1	2004. 12. 1
1/5	2	2005. 5. 20
2/5	2	2005. 5. 20
3/5	2	2005. 5. 20
4/5	2	2005. 5. 20
5/5	2	2005. 5. 20

Surface Mounting Drawing: Main PCB

■ Mounted Surface



■ Soldered Surface



Parts List for CD-S500 Series: TITLE: UNIT, MAIN PCB AC + RW(WITH ROM) Sheet No. 1/5
Rev No. 2

Item No.	Part No.	Part Name	Type	Manufacturer	Q'ty	Location
1	NJ66800-**F	UNIT, MAIN PCB AC + RW (WITH ROM)			1	
2	NJ94700-**F	ROM SET (PROG. /C.G.)				
3	C2308-071#	F-ROM (4M)	MBM29F400BC-70PFTN-E1	SPANSION	1	IC5
4	NJ66700-**F	SA, MAIN PCB AC + RW (WITHOUT ROM)			1	
5	NJ66900-**F	PWB (MAIN PCB)			1	
6	C2400-033#	IC, CPU, LQFP, 128PIN	HD6412390F20V	RENESAS	1	IC1
7	C2620-011#	IC, DUAL_OPEAMP, MSOP-8	LMV932MM/NOPB	NATIONAL SEMICONDUCTOR	1	IC2
8	C2900-143#	IC, CMOS_SYSTEM_RESET, VS=2.8V, EMP5, 5PIN	BD5342FVE	ROHM	1	IC3
9	C2319-036#	IC, 1M_SRAM, SOIC, 32PIN	M68AF127BM56MC6L	ST MICRO	2	IC6, IC7
10	C2560-602#	IC, GATE_ARRAY, TQFP, 120PIN	uPD65882GC-160-8EU-A	NEC	1	IC10
11	C2701-102#	IC, MICROSTEPPING_DRIVER, 24PIN	A3967SLBTR-T	ALLEGRO	3	IC11, IC12, IC27
12	C2256-061#	IC, DUAL_1-SHOT_TIMMER, TSSOP, 16PIN	SN74LV123APWR	TI	1	IC13
13	C2256-072#	IC, SINGLE_SCHUMITT_TRIGER_ INVERTER_GATE, SC-70, 5PIN	SN74AHC1G14DCKR	TI	1	IC15
14	C2256-051#	IC, SINGLE_INVERTER_GATE, SC-70, 5PIN	SN74AHC1G04DCKR	TI	3	IC16, IC17, IC26
15	C2256-073#	IC, OCTAL_BUS_TRANSCEIVERS_ WITH 3-STATE OUTPUTS	SN74LV245ANSR	TI	1	IC18
16	C2256-048#	IC, SINGLE_2-INPUT_AND_GATE, SC-70, 5PIN	SN74AHC1G08DCKR	TI	1	IC20
17	C2256-049#	IC, SINGLE_2-INPUT_OR_GATE, SC-70, 5PIN	SN74AHC1G32DCKR	TI	3	IC19, IC21, IC22
18	C2800-132#	IC, SURFACE_MOUNT_SWITCHING_ REGULATOR_IC	SI-8050JD	SANKEN	1	IC23
19	C2703-428#	IC, FULL_BRIDGE_DRIVER_IC, 7PIN	TA8428K	TOSHIBA	1	IC24
20	C6198-727#	CN, MAIN_FFC_CONNECTOR, 27PIN	27FE-BT-VK-N	JST	1	CN1
21	C6149-167#	CN, I/F_BOAD_CONNECTOR, 30PIN	DHB-PA30-R131N-FA	DDK	1	CN2

Item No.	Part No.	Part Name	Type	Manufacturer	Q'ty	Location
22	C6149-168#	CN, DRAWER_CONNECTOR, 6PIN	285D-7660J-101-FA	DDK	1	CN3
23	C6198-608#	CN, OPEPANE_FFC_CONNECTOR	08FE-ST-VK-N	JST	1	CN4
24	C6202-102#	CN, FRONT_COVER_SWITCH_ CONNECTOR, 2PIN	B2B-PH-K-S (LF) (SN)	JST	1	CN5
25	C6205-002#	CN, REAR_COVER_SWITCH_ CONNECTOR, 2PIN	B2P-VH (LF) (SN)	JST	1	CN6
26	C6202-603#	CN, PAPER_NEAR_END_SENSOR_ CONNECTOR, BLACK, 3PIN	B3B-PH-K-K (LF) (SN)	JST	1	CN7
27	C6202-704#	CN, REWINDER_MOTOR_ CONNECTOR, 4PIN	B4B-EH-K (LF) (SN)	JST	1	CN8
28	C6180-093#	CN, POWER_CABLE_JACK, 3PIN	TCS7960-5320177	HOSHIDEN	1	CN9
29	C6198-404#	CN, CUTTER_CONNECTOR, 4PIN	5267-04AX	MOLLEX	1	CN10
30	C6202-103#	CN, BM_SENSOR_CONNECTOR, 3PIN	B3B-PH-K-S (LF) (SN)	JST	1	CN11
31	C5270-354#	C, CHIP_CAP, 470PF, B, K, 50V, 1005	MCH155CN471KK	ROHM	2	C1, C2
32	C5270-351#	C, CHIP_CAP, 0.1UF, F, Z, 16V, 1005	MCH153FN104ZK	ROHM	40	C4, C8, C9, C10, C11, C12, C13, C17, C15, C18, C19, C26, C27, C28, C29, C30, C31, C32, C34, C35, C37, C41, C42, C44, C49, C55, C60, C61, C62, C63, C64, C65, C66, C67, C71, C78, C84, C94, C96, C97
33	C5270-426#	C, CHIP_CAP, 0.01UF, B, K, 16V, 1005	MCH153CN103KK	ROHM	1	C5
34	C5270-447#	C, CHIP_CAP, 18PF, CH, J, 50V, 1005	MCH155A180JK	ROHM	2	C6, C7
35	C5270-427#	C, CHIP_CAP, 0.47UF, F, Z, 10V, 1005	GRM155F11A474ZE01D	MURATA	1	C14
36	C5270-428#	C, CHIP_CAP, 0.22UF, F, Z, 50V, 1608	GRM188F11H224ZA01D	MURATA	3	C33, C40, C95
37	C5270-429#	C, CHIP_CAP, 0.22UF, B, K, 10V, 1005	GRM155B31A224KE18D	MURATA	3	C36, C43, C98
38	C5270-430#	C, CHIP_CAP, 680PF, B, K, 50V, 1005	MCH155CN681KK	ROHM	6	C38, C39, C45, C46, C99, C100
39	C5270-353#	C, CHIP_CAP, 1UF, B, K, 10V, 1608	GRM188B11A105KA61D	MURATA	2	C47, C48
40	C5270-326#	C, CHIP_CAP, 1000PF, B, K, 50V, 1005	MCH155CN102KK	ROHM	17	C51, C52, C53, C54, C68, C72, C73, C74, C75, C76, C77, C79, C82, C83, C91, C92, C93
41	C5270-431#	C, CHIP_CAP, 1000PF, B, K, 250V, 1608	GRM188R72E102KW07D	MURATA	2	C69, C70

Item No.	Part No.	Part Name	Type	Manufacturer	Q'ty	Location
42	C5270-432#	C, CHIP_CAP, 0.1UF, F, Z, 50V, 1608	GRM188F11H104ZA01D	MURATA	2	C80, C81
43	C5190-709#	EC, AL_ELEC_CAP, 47UF, 35V	UWX1V470MCL1GB	NICHICON	2	EC1, EC3
44	C5190-710#	EC, AL_ELEC_CAP, 10UF, 10V	UZR1C100MCL1GB	NICHICON	3	EC2, EC4, EC9
45	C5190-705#	EC, AL_ELEC_CAP, 220UF, 35V	UVR1V221MPD	NICHICON	1	EC6
46	C5190-706#	EC, AL_ELEC_CAP, 470UF, 16V	UVR1C471MPD	NICHICON	1	EC7
47	C3600-118#	D, RECTIFIER_DIODE, VR=400V, SOD-106	1SR154-400	ROHM	1	D1
48	C3600-134#	D, SWITCHING_DIODE, VR=80V, SC-76	1SS355TE-17	ROHM	3	D3, D4.D7
49	C3610-078#	D, SCHOTTKY_BARRIER_DIODE, VR=60V	SPB-G56S	SANKEN	1	D5
50	C3610-071#	D, SCHOTTKY_BARRIER_DIODE, VR=40V, SC-70	RB715FT106	ROHM	1	D8
51	C3610-079#	D, SCHOTTKY_BARRIER_DIODE, VR=60V	SFPB-66V	SANKEN	1	D9
52	C7302-402#	F, CHIP_FUSE, 32V, 3A, 1608	0467003.NR	LITTEL FUSE	2	F1, F2
53	C7302-414#	F, CHIP_FUSE, 65V, 15A, 1608	R453015.MR	LITTEL FUSE	1	F4
54	C7302-399#	F, CHIP_FUSE, 32V, 5A, 1608	0467005.NR	LITTEL FUSE	1	F5
55	C7511-053#	L, CHOKE_COIL	DLW5BSN191SQ2L	MURATA	1	L1
56	C7511-168#	L, INDUCTOR	CDRH104RNP-101N	SUMIDA	1	L2
57	C4927-000#	R, CHIP_RES, 0OHM, 5%, 1005	MCR01MZSEJ000	ROHM	20	FB1, FB3, FB4, FB6, FB7, FB8, FB12, FB13, FB14, FB15, FB16, FB17, FB18, JP3, JP4, JP15, R16, JP17, JP21, R92
58	C4929-000#	R, CHIP_RES, 0OHM, 5%, 1608	MCR03EZHEJ000	ROHM	4	FB9, FB10, FB11, R100
59	C4927-101#	R, CHIP_RES, 100OHM, 5%, 1005	MCR01MZSEJ101	ROHM	13	R1, R3, R5, R7, R22, R32, R73, R74, R75, R77, R78, R79, R80
60	C4927-621#	R, CHIP_RES, 620OHM, 5%, 1005	MCR01MZSEJ621	ROHM	2	R2, R6

Item No.	Part No.	Part Name	Type	Manufacturer	Q'ty	Location
61	C4927-223#	R, CHIP_RES, 22KOHM, 5%, 1005	MCR01MZSEJ223	ROHM	41	R9, R10, R11, R12, R13, R14, R18, R26, R27, R36, R37, R60, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R83, R84, R85, R95, R97, R108, R109, R110, R113, R115, R116, R117, R120, R127, R135, R140, R141, R142
62	C4927-105#	R, CHIP_RES, 1MOHM, 5%, 1005	MCR01MZSEJ105	ROHM	1	R15
63	C4923-005#	R, CHIP_RES, 0.91OHM, 1%, 5025	MCR50JZHEFLR910	ROHM	6	R19, R20, R29, R30, R125, R126
64	C4927-103#	R, CHIP_RES, 10KOHM, 5%, 1005	MCR01MZSEJ103	ROHM	4	R40, R41, R118, R119
65	C4927-563#	R, CHIP_RES, 56KOHM, 5%, 1005	MCR01MZSEJ563	ROHM	6	R25, R28, R35, R38, R134, R136
66	C4927-434#	R, CHIP_RES, 430KOHM, 5%, 1005	MCR01MZSEJ434	ROHM	1	R39
67	C4927-204#	R, CHIP_RES, 200KOHM, 5%, 1005	MCR01MZSEJ204	ROHM	2	R42, R61
68	C4927-102#	R, CHIP_RES, 1KOHM, 5%, 1005	MCR01MZSEJ102	ROHM	25	R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R59, R81, R82, R89, R90, R96, R105, R101, R114, R123, R131, R138, R139
69	C4927-303#	R, CHIP_RES, 30KOHM, 5%, 1005	MCR01MZSEJ303	ROHM	3	R56, R98, R124
70	C4937-120#	R, CHIP_RES, 3.3KOHM, 1%, 1005	MCR01MZSEF3301	ROHM	2	R57, R58
71	C4928-271#	R, CHIP_RES, 270OHM, 5%, 2012	MCR10EZHEJ271	ROHM	3	R86, R87, R88
72	C4927-104#	R, CHIP_RES, 100KOHM, 5%, 1005	MCR01MZSEJ104	ROHM	1	R102
73	C4937-110#	R, CHIP_RES, 30KOHM, 1%, 1005	MCR01MZSEF3002	ROHM	1	R104
74	C4937-123#	R, CHIP_RES, 4.3KOHM, 1%, 1005	MCR01MZSEF4301	ROHM	3	R99, R106, R128
75	C4937-102#	R, CHIP_RES, 10KOHM, 1%, 1005	MCR01MZSEF1002	ROHM	3	R55, R111, R112
76	C4600-083#	TH, CHIP_THERMISTOR, 10KOHM, 1%, 1005	103KT1005-1P	ISHIZUKA	1	TH1
77	C3905-071#	DTR, DG_TRANSSITOR	DTC143EUAFT106	ROHM	10	DTR1, DTR3, DTR4, DTR5, DTR6, DTR7, DTR8, DTR9, DTR10, DTR11
78	C3905-072#	DTR, DG_TRANSSITOR	DTA114EUAFT106	ROHM	1	DTR2
79	C7650-007#	SW, 10A_250V_AC_QUALIFIED_ POWER_SWITCH	SDDJE10800	ALPS	1	SW1

Item No.	Part No.	Part Name	Type	Manufacturer	Q'ty	Location
80	C3551-004#	TRA, TR_ARRAY	SMA4032	SANKEN	2	TRA1, TRA2
81	C3903-098#	TR, P-CH_MOSFET, ID=2A, 3PIN	2SJ356-T1-AZ	NEC	1	TR8
82	C3903-108#	TR, P-CH_MOSFET, ID=3A, 3PIN	2SJ358-T1-AZ	NEC	1	TR1
83	C3402-195#	TR, POWER_TRANSISTOR, 100V, 2A, 3PIN	2SD2195F-T100	ROHM	1	TR2
84	C3201-351#	TR, DARLINGTON_TRANSISTOR, DIP, 3PIN	2SB1351	SANKEN	1	TR3
85	C7800-062#	HEAT_SINK	PUE16-25N	MIZUTANI ELEC	1	(TR3)
86	E01030-080F	SCREW	SCREW, PH (SW + PW#2), M3X8		1	(TR3)
87	C3402-143#	TR, MEDIUM_DRIVE_TRANSISTOR, SC-63	2SD2143F	ROHM	2	TR4, TR5
88	C7400-003#	Y, CERAMIC_RESONATOR, 20MHZ	CSTCE20M0V53-R0	MURATA	1	Y1
89	C3750-168#	ZD, ZENNER_DIODE,	RD51EB-T4-AZ	NEC	1	ZD1
90	C3750-166#	ZD, ZENNER_DIODE,	UDZSFTE-176.8B	ROHM	1	ZD2
91	C7900-114#	BZ, BUZZER	DBX05ALF-P050N	DB Products Ltd.	1	BZ1

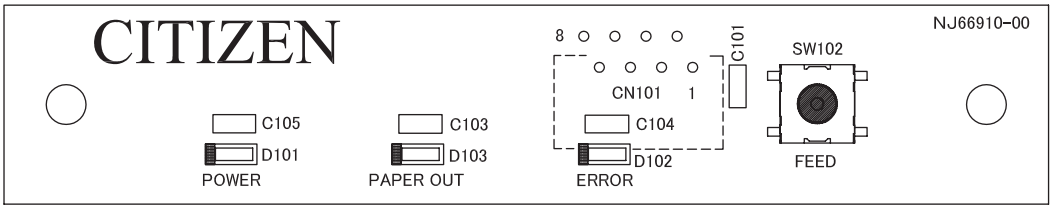
4-2-2 Parts List & Location for Unit, Ope-Pane PCB

Parts List & Location for Unit, Ope-Pane PCB

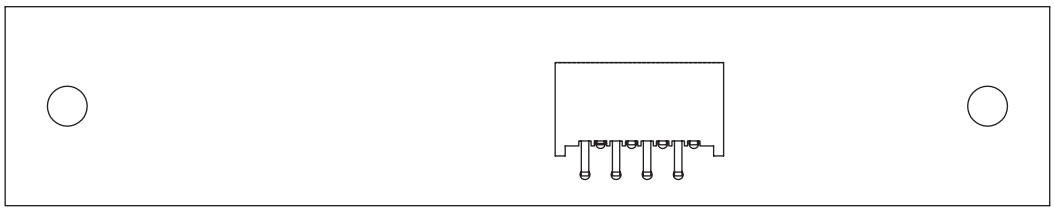
Revisions List		
Sheet No.	Rev. No.	Date
1/1	1	2004. 12. 1

Surface Mounting Drawing: Ope-Pane PCB

■ Mounted Surface



■ Soldered Surface



Parts List for CD-S500 Series: TITLE: Ope-Pane PCB Sheet No. 1/1

Rev. No. 1

Item No.	Part No.	Part Name	Type	Manufacturer	Q'ty	Location
1	NJ66730-**	SA, OPE-PANE PCB			1	
2	NJ66910-**	PWB (OPE-PANE PCB)			1	
3	C6198-608	CN,OPE-PANE_CONNECTOR	08FE-ST-VK-N	JST	1	CN101
4	C3803-092	D,CHIP_LED (GREEN), 1608	SML-310PT	ROHM	1	D101
	(C3803-089)		LT1K67A	SHARP		
5	C3803-083	D,CHIP_LED (ORANGE), 1608	SML-310DT	ROHM	2	D102,D103
	(C3803-095)		LT1S67A	SHARP		
6	C7640-047	SW, SWITCH (TACT)	B3FS-1010P	OMRON	1	SW102

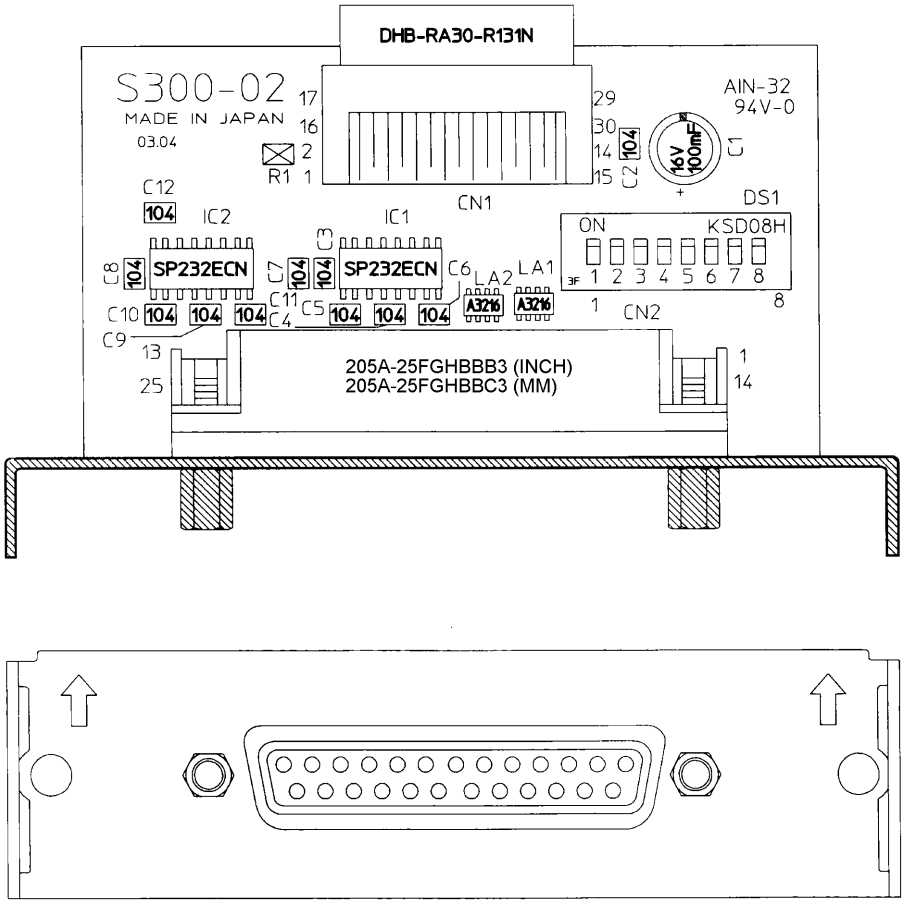
4-2-3 Parts List & Location for Unit, Serial I/F PCB

Parts List & Location for Unit, Serial I/F (MM) PCB

Revisions List		
Sheet No.	Rev. No.	Date
1/1	1	2004. 12. 1

Surface Mounting Drawing: Serial I/F PCB

■ Mounted Surface



Parts List for CD-S500 Series: TITLE: Serial I/F PCB (MM) Sheet No. 1/1

Rev. No. 1

Item No.	Part No.	Part Name	Type	Manufacturer	Q'ty	Location
1	NJ66745-**	SA, SERIAL I/F PCB (MM)			1	
2	NJ66920-**	PWB (SERIAL I/F PCB)			1	
3	C2900-128	IC, RS232C_DRV/RCV, N-SOIC, 16PIN	SP232EEN-T/R	SIPEX	2	IC1, IC2
4	C6149-170	CN, CONNECT_TO_MAIN, 30PIN	DHB-RA30-R131N-FA	DDK	1	CN1
5	C6180-256	CN, RS232_I/F, 25PIN, M2.6	205A-25FGNBBC3	CHANT SINCERE	1	CN2
6	C5190-711	EC, AL_ELEC_CAP, 100UF, 25V	UVZ1E101MED	NICHICON	1	C1
7	C5270-432	C, CHIP_CAP, 0.1UF, F, Z, 50V, 1608	GRM188F11H104ZA01D	MURATA	11	C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12
8	C7539-044	FB, CHIP_BEAD_ARRAY, 120OHM, 3216	BLA31BD121SN4D	MURATA	2	LA1, LA2
9	NJ64102-00	PLATE, I/F SERIAL			1	
10	E8488-310	LABEL (MM)			1	

Parts List & Location for Unit, Serial I/F (INCH) PCB

Revisions List		
Sheet No.	Rev. No.	Date
1/1	1	2004. 12. 1

Parts List for CD-S500 Series: TITLE: Serial I/F PCB (INCH) Sheet No. 1/1

Rev. No. 1

Item No.	Part No.	Part Name	Type	Manufacturer	Q'ty	Location
1	NJ66746-**	SA, SERIAL I/F PCB (INCH)			1	
2	NJ66920-**	PWB (SERIAL I/F PCB)			1	
3	C2900-128	IC, RS232C_DRV/RCV, N-SOIC, 16PIN	SP232EEN-T/R	SIPEX	2	IC1, IC2
4	C6149-170	CN, CONNECT_TO_MAIN, 30PIN	DHB-RA30-R131N-FA	DDK	1	CN1
5	C6180-257	CN, RS232_I/F, 25PIN, 4#40	205A-25FGNBBB3	CHANT SINCERE	1	CN2
6	C5190-711	EC, AL_ELEC_CAP, 100UF, 25V	UVZ1E101MED	NICHICON	1	C1
7	C5270-432	C, CHIP_CAP, 0.1UF, F, Z, 50V, 1608	GRM188F11H104ZA01D	MURATA	11	C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12
8	C7539-044	FB, CHIP_BEAD_ARRAY, 120OHM, 3216	BLA31BD121SN4D	MURATA	2	LA1, LA2
9	NJ64102-00	PLATE, I/F SERIAL			1	
10	E8488-320	LABEL (INCH)			1	

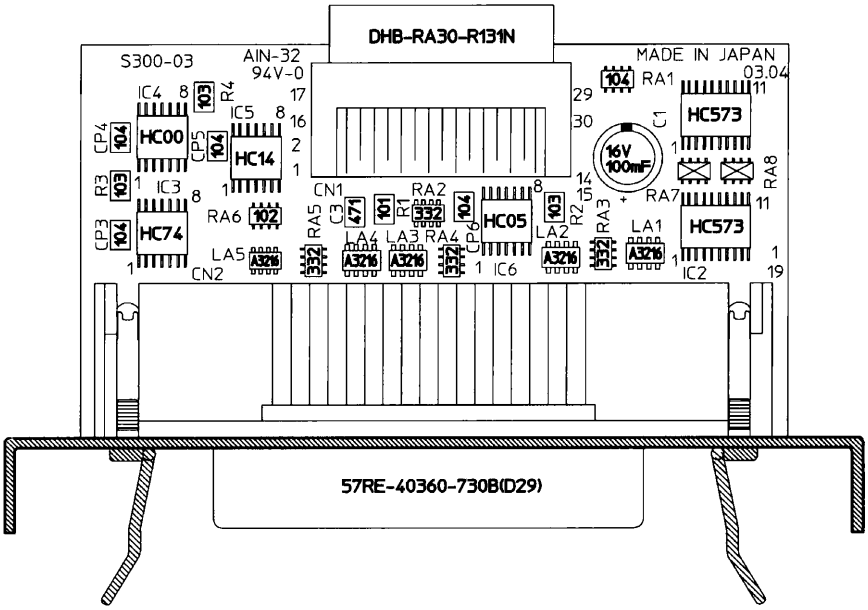
4-2-4 Parts List & Location for Unit, Parallel I/F PCB

Parts List & Location for Unit, Parallel I/F PCB

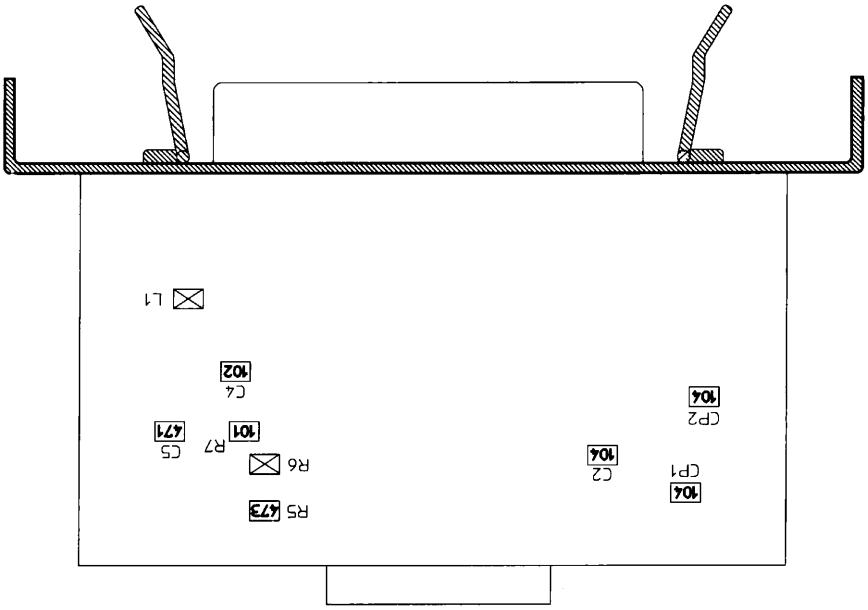
Revisions List		
Sheet No.	Rev. No.	Date
1/1	1	2004. 12. 1

Surface Mounting Drawing: Parallel I/F PCB

■ Mounted Surface



■ Soldered Surface



Parts List for CD-S500 Series: TITLE: Parallel I/F PCB Sheet No.

Rev. No. 1

Item No.	Part No.	Part Name	Type	Manufacturer	Q'ty	Location
1	NJ66750-**	SA, PARALLEL I/F PCB			1	
2	NJ66921-**	PWB (PARALLEL I/F PCB)			1	
3	C2256-075	IC, OCT_LATCH, TSSOP, 20PIN	SN74HCT573PWR	TI	2	IC1, IC2
	(C2256-082#)		TC74ACT573FT (EL)	TOSHIBA		
	(C2256-083#)		SN74AHCT573PWR	TI		
4	C2256-076	IC, DUAL_FLIP_FLOP, TSSOP, 14PIN	SN74AHC74PWR	TI	1	IC3
5	C2256-077	IC, QUAD_NAND, TSSOP, 14PIN	SN74AHC00PWR	TI	1	IC4
6	C2256-078	ICHEX_SCHMIT_INVERTER, TSSOP, 14PIN	SN74AHC14PWR	TI	1	IC5
7	C2256-079	ICHEX_T_INVERTER_OPENDRAIN, TSSOP, 14PIN	SN74AHC05PWR	TI	1	IC6
8	C6149-170	CN, CONNECT_TO_MAIN, 30PIN	DHB-RA30-R131N-FA	DDK	1	CN1
9	C6149-166	CN, PARALEL_I/F, 36PIN	57RE-40360-730B (D3)-FA	DDK	1	CN2
10	C5190-711	EC, AL_ELEC_CAP, 100UF, 25V	UVZ1E101MED	NICHICON	1	C1
11	C5270-451	C, CHIP_CAP, 0.1UF, B, K, 50V, 1608	GRM188B31H104KA92	MURATA	7	C2, CP1, CP2, CP3, CP4, CP5, CP6
12	C5270-452	C, CHIP_CAP, 470PF, B, K, 50V, 1608	GRM188B11H471KA01	MURATA	2	C3, C5
13	C5270-453	C, CHIP_CAP, 1000PF, B, K, 50V, 1608	GRM188B11H102KA01	MURATA	1	C4
14	C7539-045	FB, CHIP_BEAD, 120OHM, 2012	BLM21AG121SN1D	MURATA	1	L1
15	C7539-044	FB, CHIP_BEAD_ARRAY, 120OHM, 3216	BLA31BD121SN4D	MURATA	5	LA1, LA2, LA3, LA4, LA5
16	C4928-101	R, CHIP_RES, 100OHM, 5%, 2012	MCR10EZHJ101	ROHM	2	R1, R7
17	C4928-103	R, CHIP_RES, 10KOHM, 5%, 2012	MCR10EZHJ103	ROHM	3	R2, R3, R4
18	C4928-473	R, CHIP_RES, 47KOHM, 5%, 2012	MCR10EZHJ473	ROHM	1	R5
19	C4498-014	RA, CHIP_RES_ARRAY, 100KOHM	BCN168SB104J	BI TEC.	1	RA1
20	C4498-015	RA, CHIP_RES_ARRAY, 3.3KOHM	BCN168SB332J	BI TEC.	4	RA2, RA3, RA4, RA5
21	C4498-016	RA, CHIP_RES_ARRAY, 1KOHM	BCN164AB102J7	BI TEC.	1	RA6
22	NJ64101-00	PLATE,I/F PARALLEL			1	

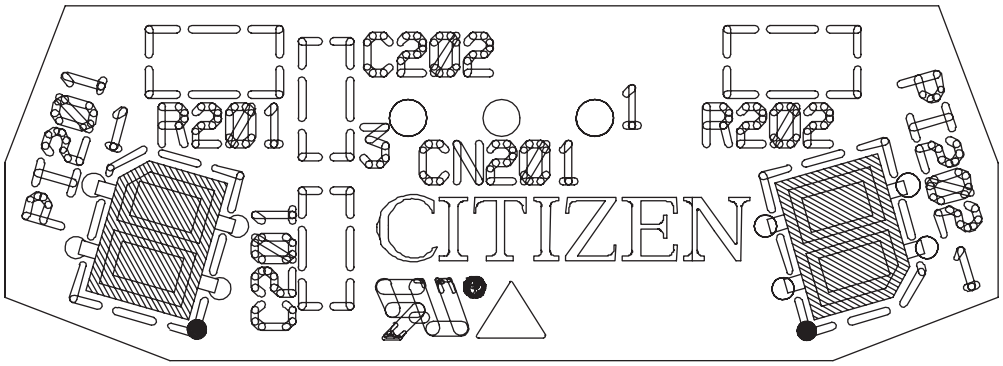
4-2-5 Parts List & Location for Unit, PNE SENS PCB

Parts List & Location for Unit, PNE SENS PCB

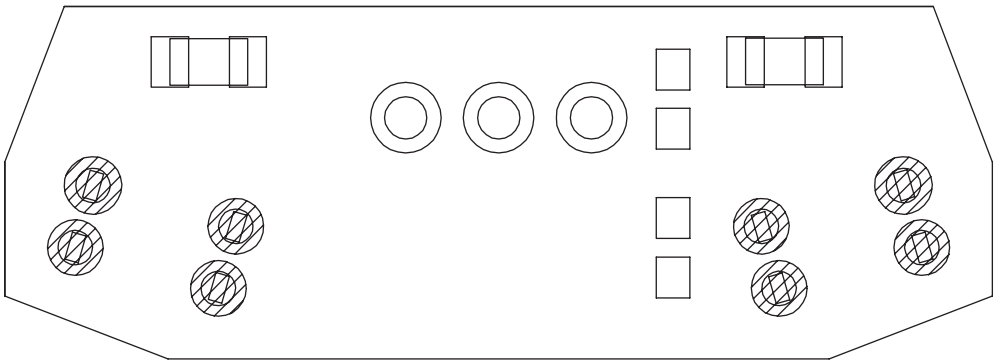
Revisions List		
Sheet No.	Rev. No.	Date
1/1	1	2004. 12. 1

Surface Mounting Drawing: PNE SENS PCB

■ Mounted Surface



■ Soldered Surface



Parts List for CD-S500 Series: TITLE: PNE SENS PCB Sheet No.

Rev. No. 1

Item No.	Part No.	Part Name	Type	Manufacturer	Q'ty	Location
1	NJ66766-**	SA, PNE SENS PCB			1	
2	NJ66916-**	PWB (PNE SENS PCB)			1	
3	C3801-054	PI, PHOTO_INTERRUPTER	GP2S24B100F	SHARP	2	PI201, PI202
	(C3801-055)		GP2S24B	SHARP		
4	C4928-221#	R, CHIP_RES, 220OHM, 5%, 2012	MCR10EZHEJ221	ROHM	2	R201, 202

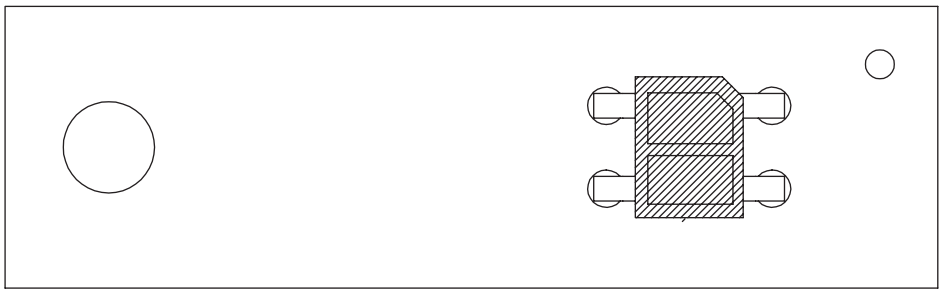
4-2-6 Parts List & Location for Unit, BM SENS PCB

Parts List & Location for Unit, BM SENS PCB

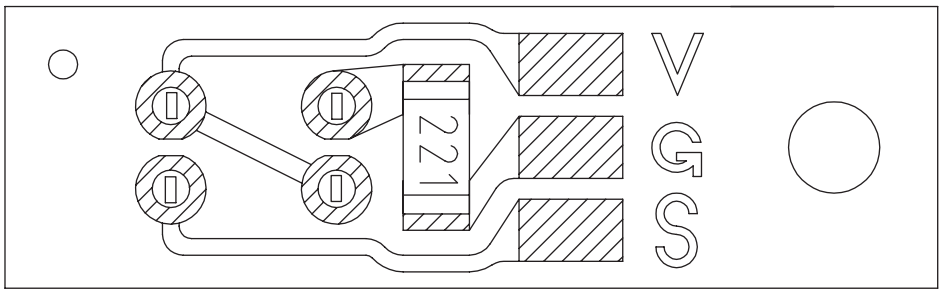
Revisions List		
Sheet No.	Rev. No.	Date
1/1	1	2004. 12. 1

Surface Mounting Drawing: BM SENS PCB

■ Mounted Surface



■ Soldered Surface



Parts List for CD-S500 Series: TITLE: BM SENS PCB Sheet No.

Rev. No. 1

Item No.	Part No.	Part Name	Type	Manufacturer	Q'ty	Location
1	NJ66765-**	SA, BM SENS PCB			1	
2	NJ66922-**	PWB (BM SENSOR PCB)			1	
3	C3802-042	PI, PHOTO_INTERRUPTER	TLP908-0 (LB)	TOSHIBA	1	PI301
	(C3801-040)		SG-105	KODENSHI		
4	C4920-221	R, CHIP_RES, 220OHM, 5%, 3216	MCR18EZHJ221	ROHM	1	R301

4-3 Accessory Parts List

Accessory Parts List

Revisions List		
Sheet No.	Rev. No.	Date
1/1	1	2005. 5. 20

Parts List for CD-S500 Series:
TITLE: Accessory Parts List

Sheet No. 1/1
Rev. No. 1

Location	Part No.	Part Name	Q'ty/Unit			Remark
			CD-S500	CD-S501	CD-S503	
–	NJ74902-5	MANUAL, USER'S ENG	1	1	1	
–	NJ74907-5	MANUAL, USER'S MLT	1	1	1	
–	NJ74903-5	MANUAL, USER'S CHN	1	1	1	
–	C6001-001#	CORD SET (USA)	1	1	1	
–	C6001-201#	CORD SET (EU)	1	1	1	
–	C6001-400#	CORD SET (AUSTRALIA)	1	1	1	
–	C6001-801#	CORD SET (CHINA)	1	1	1	
–	NJ79901-0	PAPER, ROLL	1	1	1	FOR TEST SAMPLE
1-5	NJ69901-0	UNIT, AC ADAPTER	1	1	1	
6-28	NJ22201-0	PLATE, PARTITION 1			1	
6-28	NJ20202-0	PLATE, PARTITION 2	1	1		
–	NJ37701-0	SA, RIBBON CASSETTE (P)	1	1	1	
–	NJ37703-0	SA, RIBBON CASSETTE (B)	1	1	1	
–	NJ37702-0	SA, RIBBON CASSETTE (B/R)	1	1	1	

* CD-S500: Standard model
* CD-S501: Built-in autocutter model
* CD-S503: Rewinder model

4-4 Recommended Spare Parts List

Recommended Spare Parts List

Revisions List		
Sheet No.	Rev. No.	Date
1/1	1	2005. 5. 20

Parts List for CD-S500 Series:
TITLE: Recommended Spare Parts List

Sheet No. 1/1
Rev. No. 1

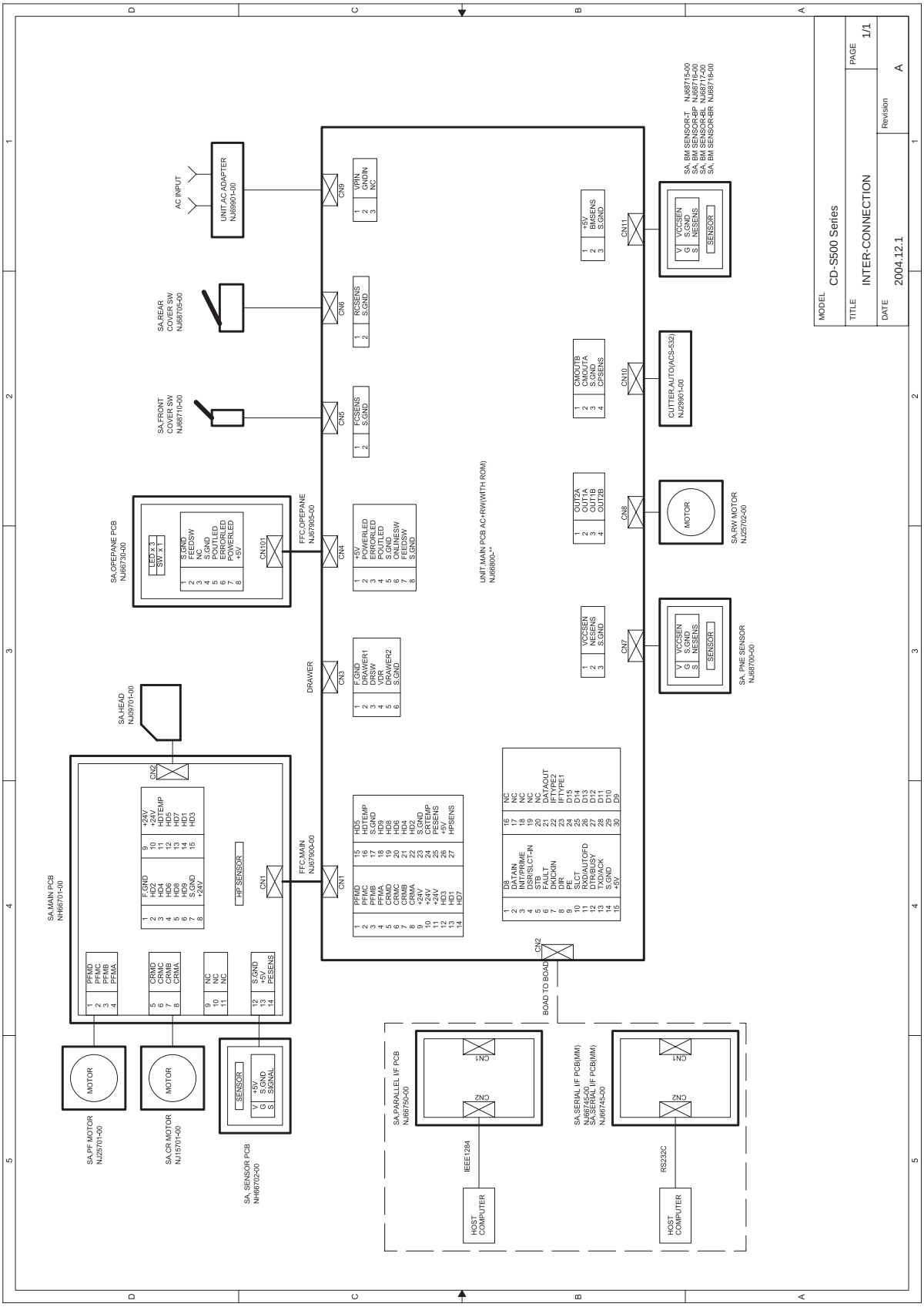
No.	Location	Part No.	Part Name	Q'ty/Unit			Remark
				CD-S500	CD-S501	CD-S503	
1	1-5	NJ69901-0	UNIT, AC ADAPTER	1	1		C
2	3-9	NJ66730-0	SA, OPE-PANE PCB	1	1	1	C
3	4-5	NJ68705-0	SA, REAR COVER SW	1	1	1	C
4	4-7	NJ68710-0	SA, FRONT COVER SW	1	1	1	C
5	4-11	NJ44116-0	CUTTER, MANUAL	1	1	1	W
6	4-18	NJ09701-0	SA PRINT HEAD	1	1	1	W
7	4-20	NH34104-0	MASK, RIBBON	1	1	1	W
8	4-30	NJ68716-0	SA, BM SENSOR PCB	1	1	1	C
9	4-32	NJ24701-0	SA, PE SENSOR HOLDER	1	1	1	Substitute for 4-28 (mechanical switch type) 4-29 not used, C
10	5-1	NJ66820-0	UNIT, MAIN PCB (WITH ROM)	1			
11		NJ66810-0	UNIT, MAIN PCB AC (WITH ROM)		1		
12		NJ66800-0	UNIT, MAIN PCB AC+RW (WITH ROM)			1	
13		NJ66834-0	UNIT, MAIN PCB CHN (WITH ROM)	1			
14		NJ66832-0	UNIT, MAIN PCB AC CHN (WITH ROM)		1		
15		NJ66830-0	UNIT, MAIN PCB A+R CH (WITH ROM)			1	
16	5-4	NJ67900-0	FFC, MAIN	1	1	1	C
17	5-5	NJ67905-0	FFC, OPE-PANE	1	1	1	C
18	5-6	NJ66745-0	SA, SERIAL I/F PCB (MM) CHN/JPN	1	1	1	SERIAL I/F metric spec.
19		NJ66746-0	SA, SERIAL I/F PCB (INCH) OTERS	1	1	1	SERIAL I/F inch spec.
20		NJ66750-0	SA, PARALLEL I/F PCB	1	1	1	PARALLEL I/F spec.
21		NJ66760-0	SA, USB I/F PCB	1	1	1	USB I/F inch spec.
22	6-3	NJ24702-0	SA, PLATEN	1	1	1	W
23	6-9	NJ22702-0	SA1, PF SHAFT	1	1	1	W
24	6-17	NJ29901-0	CUTTER, AUTO		1	1	W
25	7-1	NJ58201-0	CASE, REWINDER W			1	White case, C
26		NJ58202-0	CASE, REWINDER B			1	Black case, C
27	8-4	NJ68700-0	SA, PNE SENSOR	1	1	1	C

* CD-S500: Standard model
* CD-S501: Built-in autocutter model
* CD-S503: Rewinder model
* “W” (WORN) denotes parts which wear out from use.
* “C” (CASUAL) denotes parts other than the above.

Chapter 5

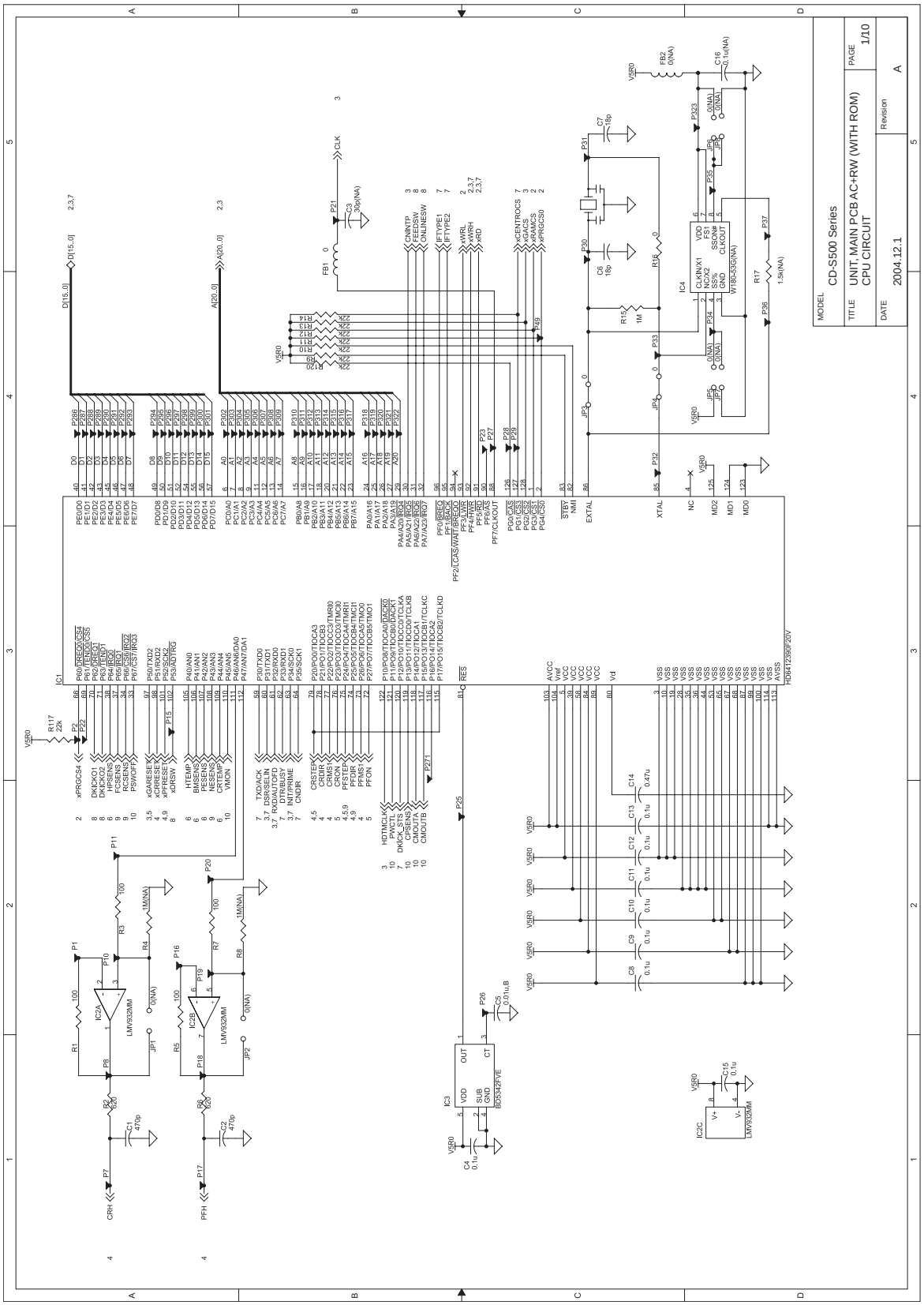
CIRCUIT DIAGRAMS

5-1 INTER-CONNECTION

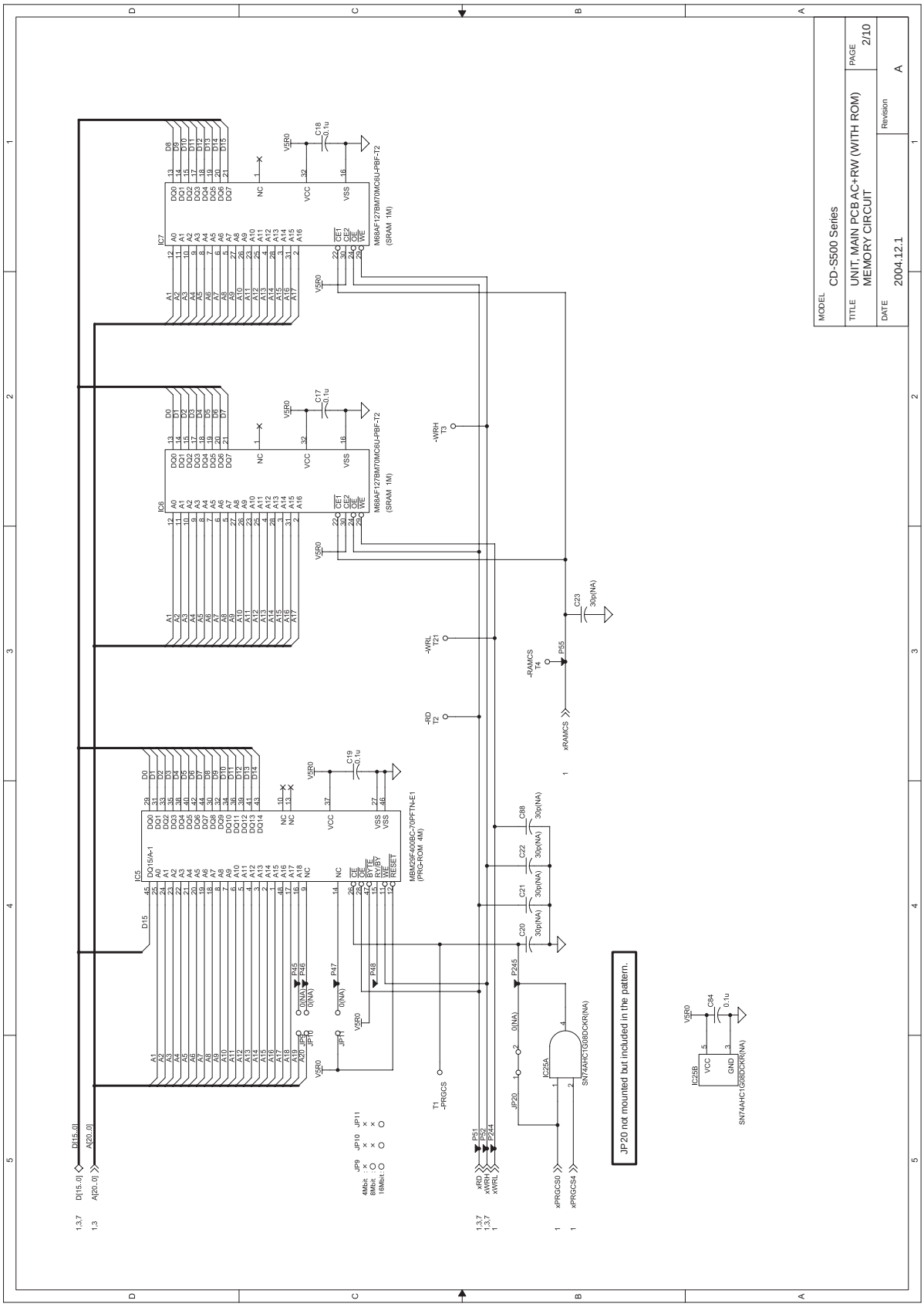


5-2 UNIT, MAIN PCB

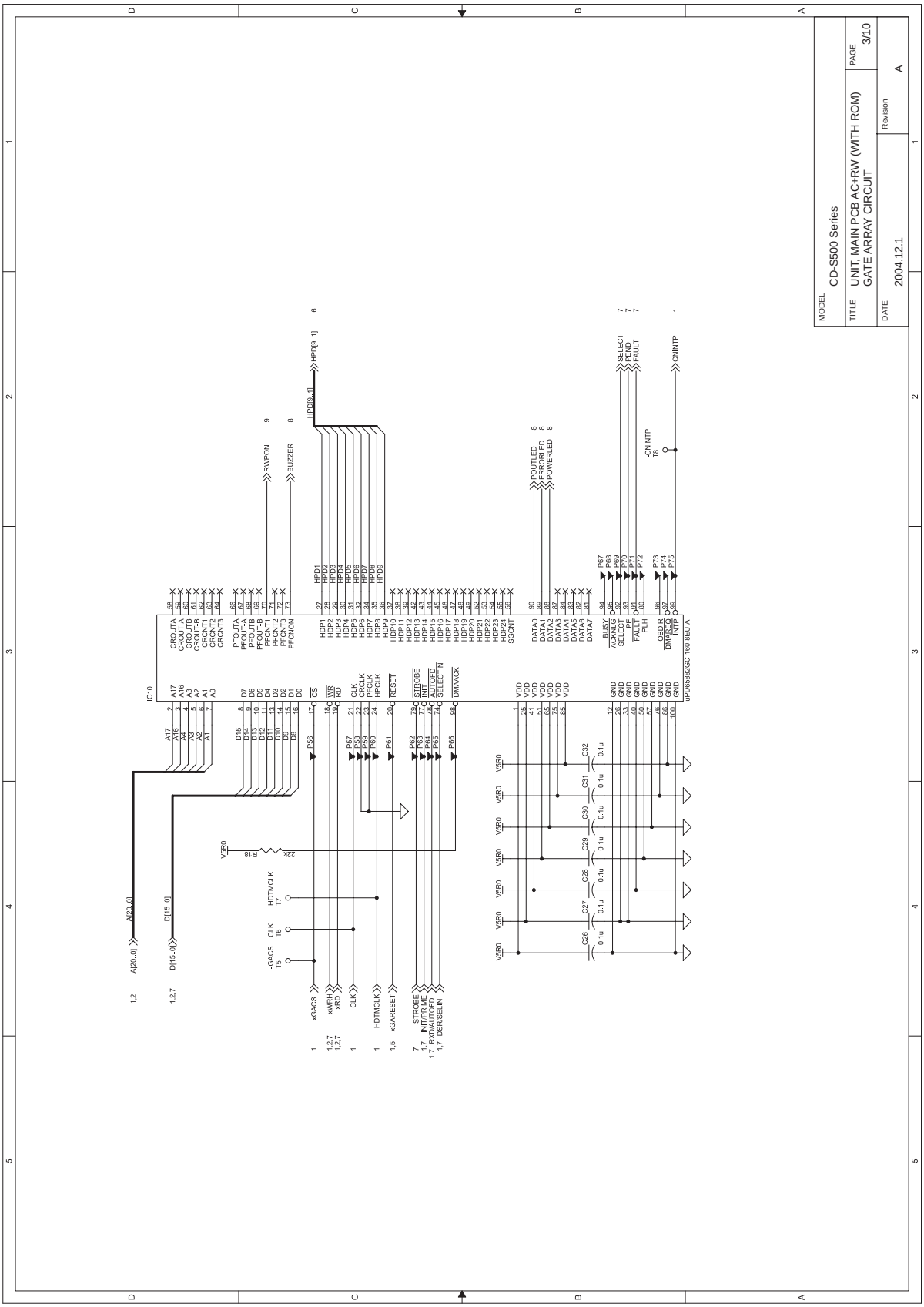
5-2-1 CPU CIRCUIT



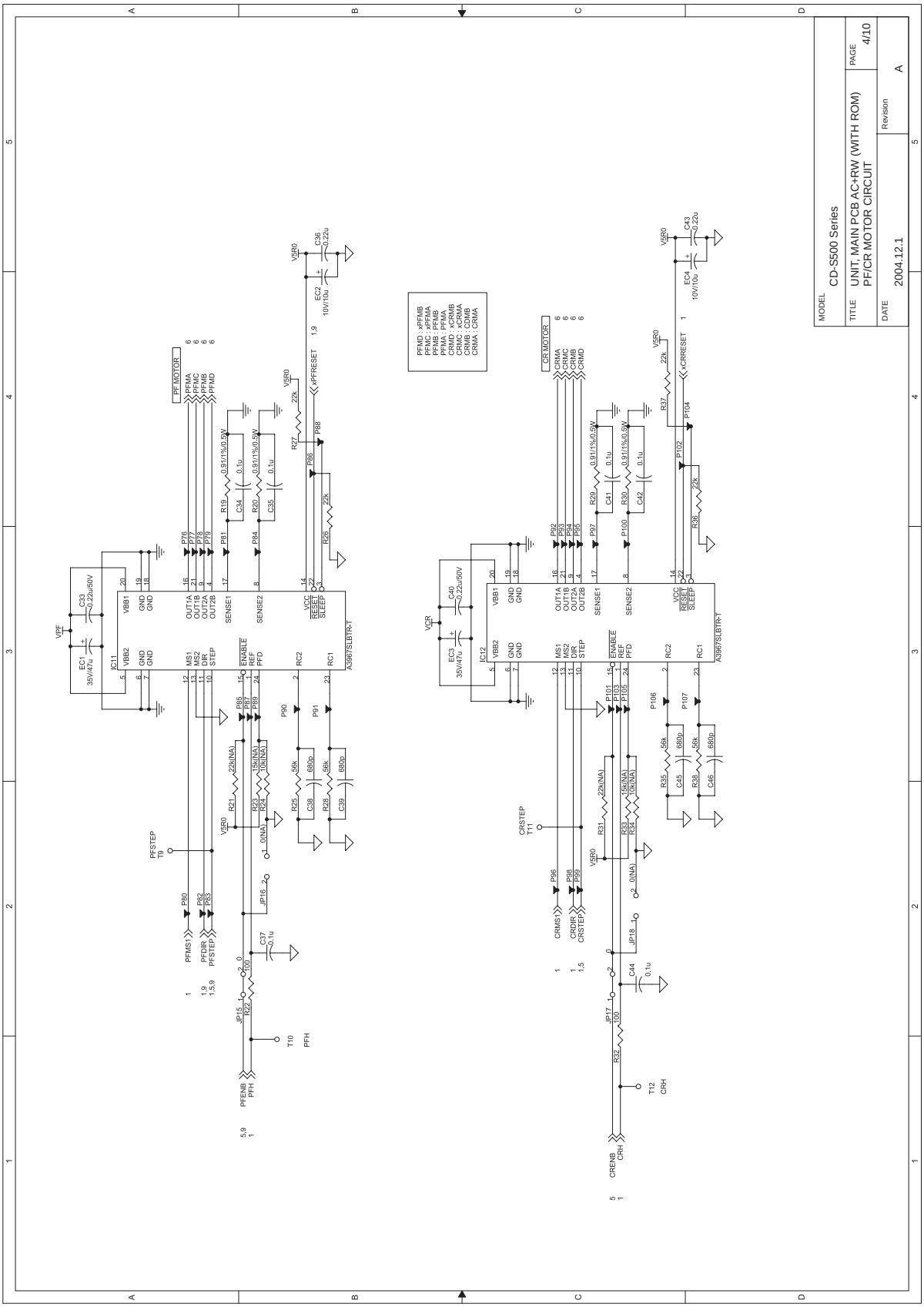
5-2-2 MEMORY CIRCUIT


MODEL CD-S500 Series
TITLE UNIT, MAIN PCB AC+RW (WITH ROM) MEMORY CIRCUIT
PAGE 2/10
DATE 2004.12.1
Revision A
JP20 not mounted but included in the pattern.

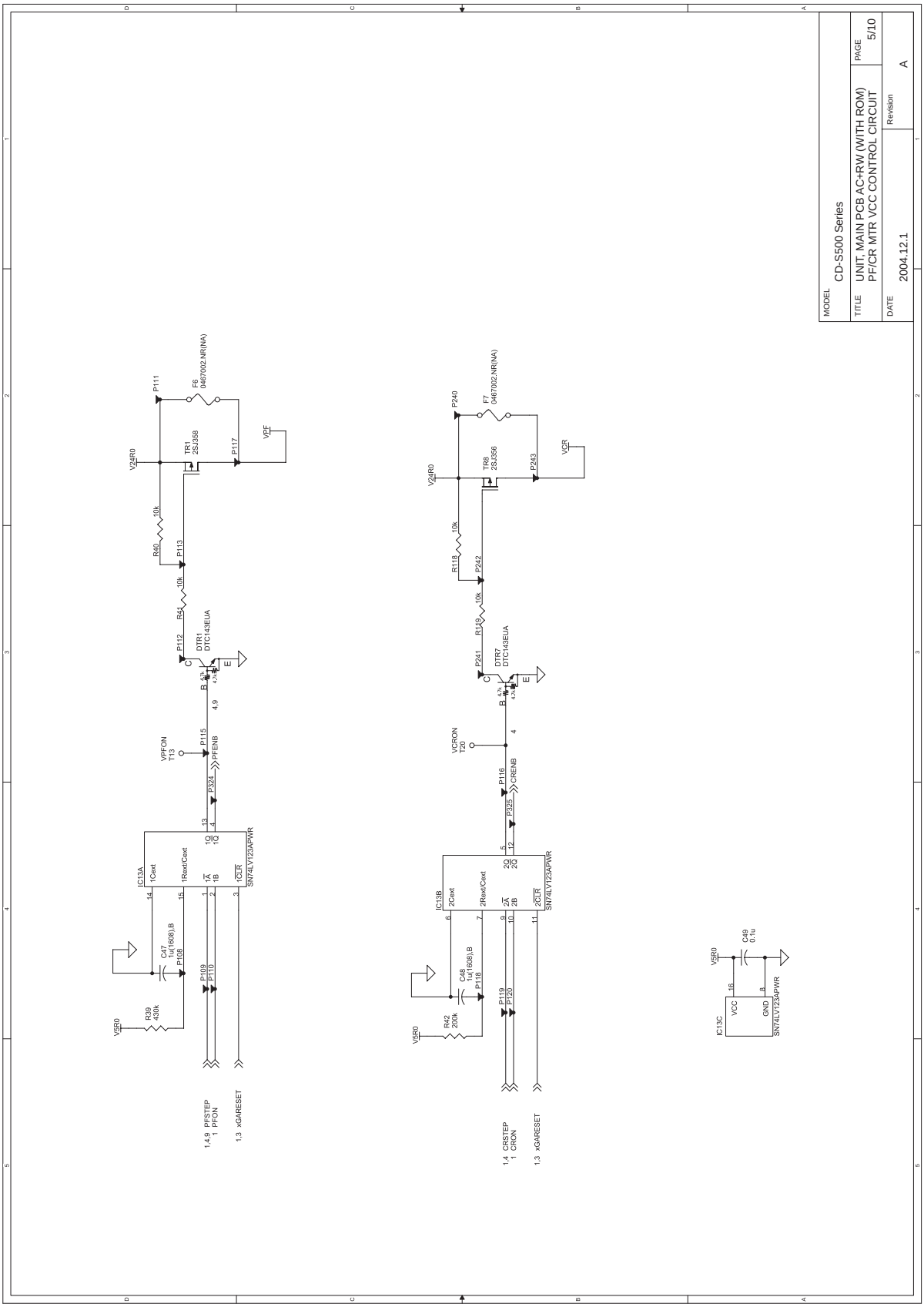
5-2-3 GATE ARRAY CIRCUIT



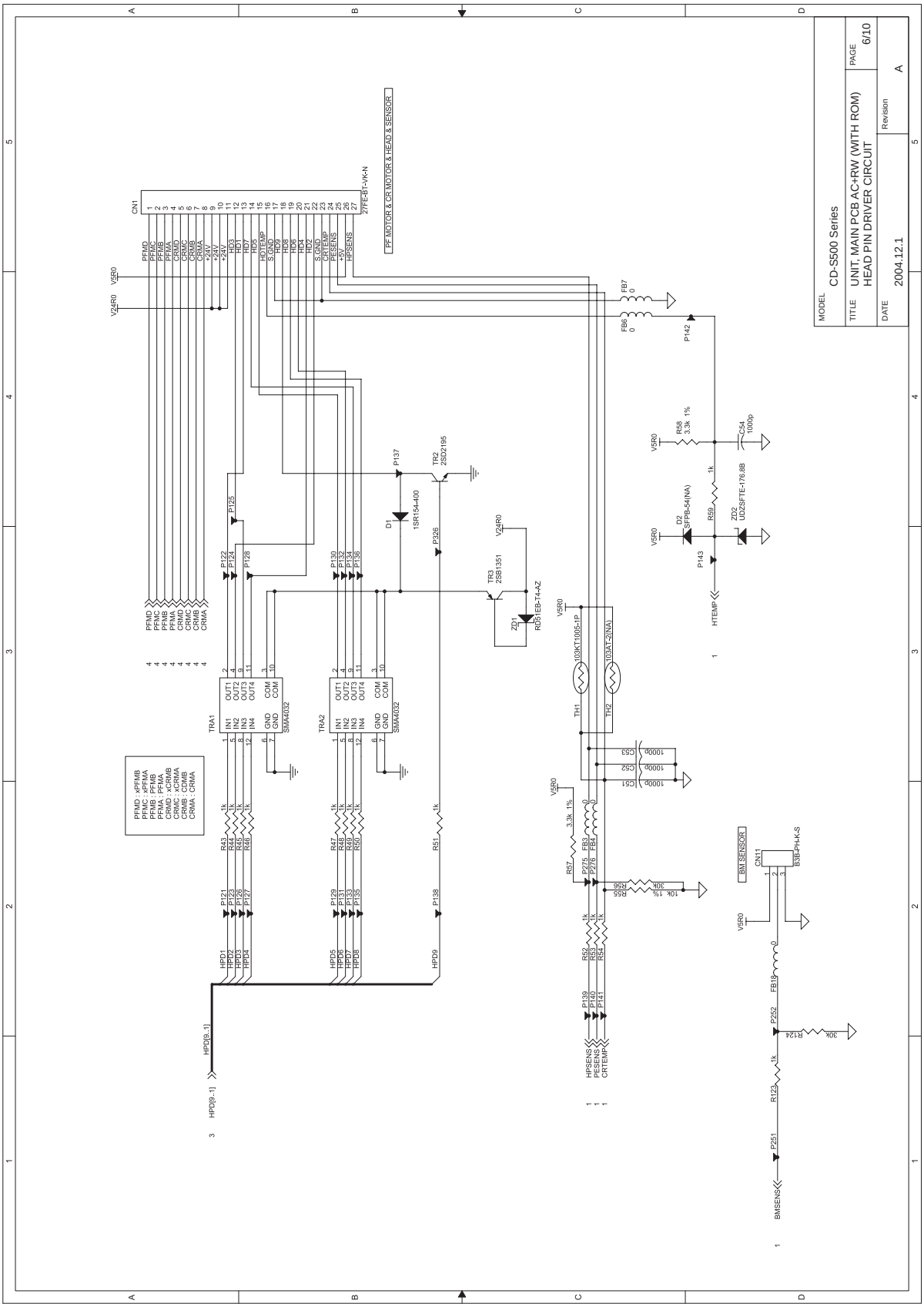
5-2-4 PF/CR MOTOR CIRCUIT



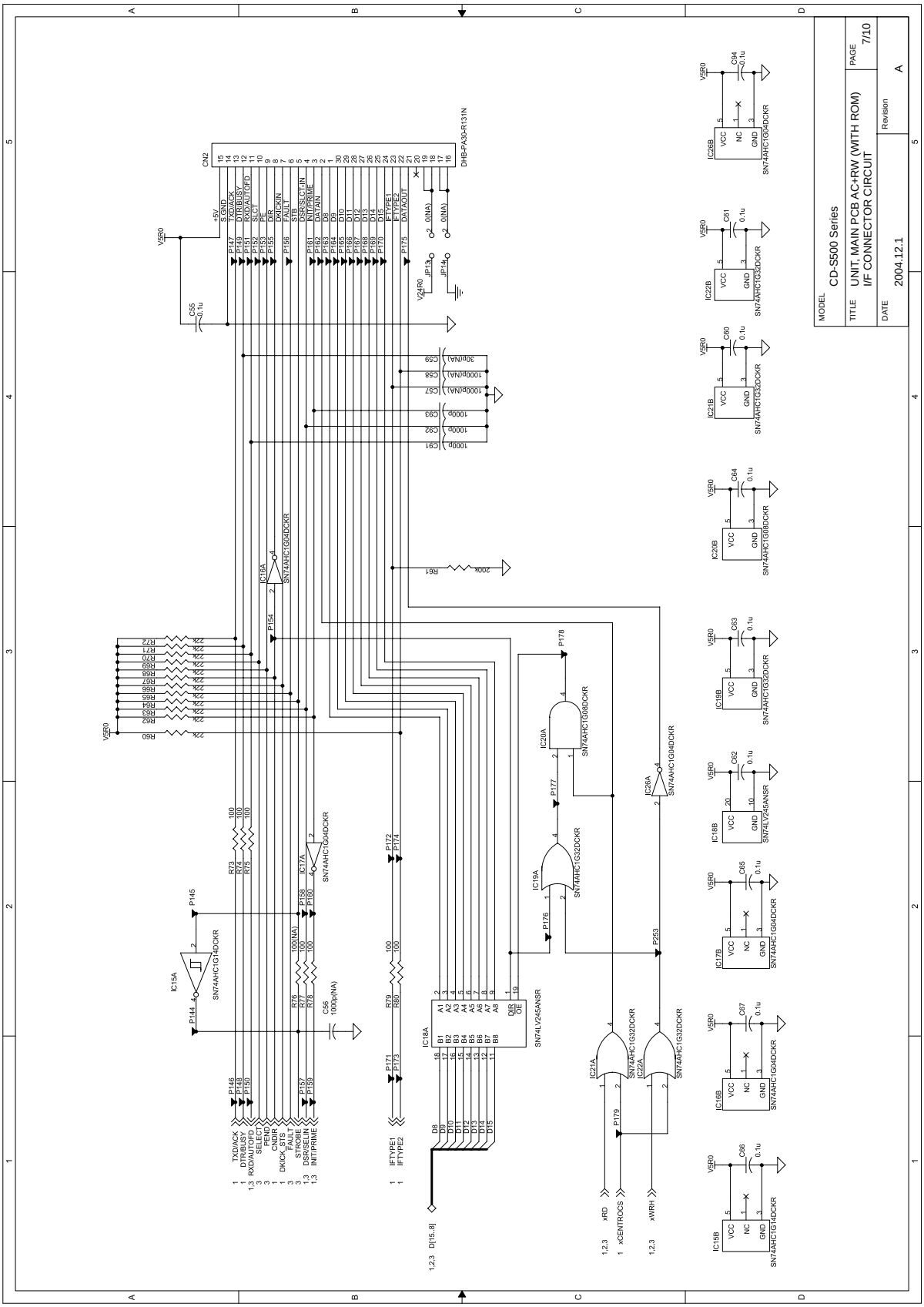
5-2-5 PF/CR MTR VCC CONTROL CIRCUIT



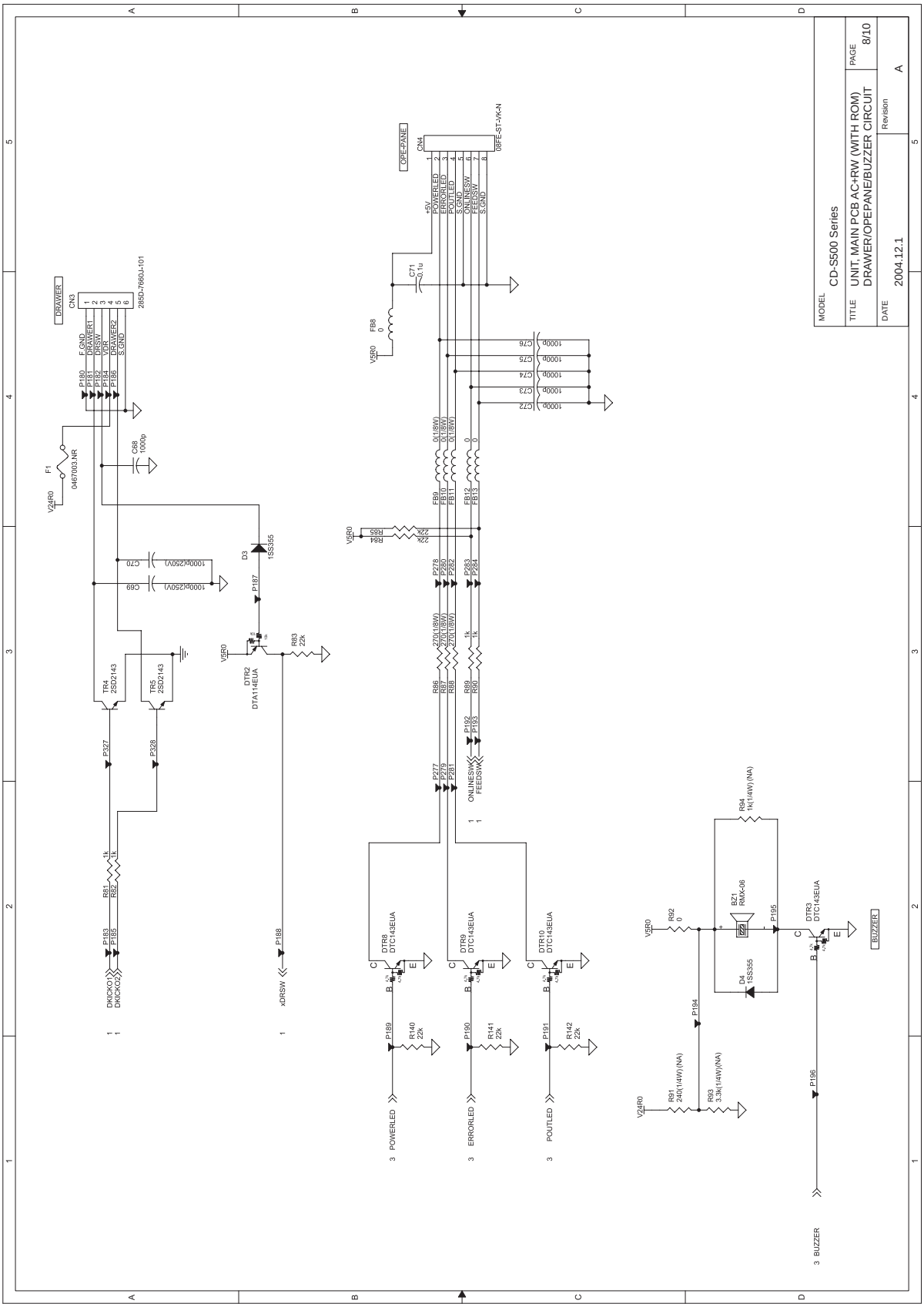
5-2-6 HEAD PIN DRIVER CIRCUIT



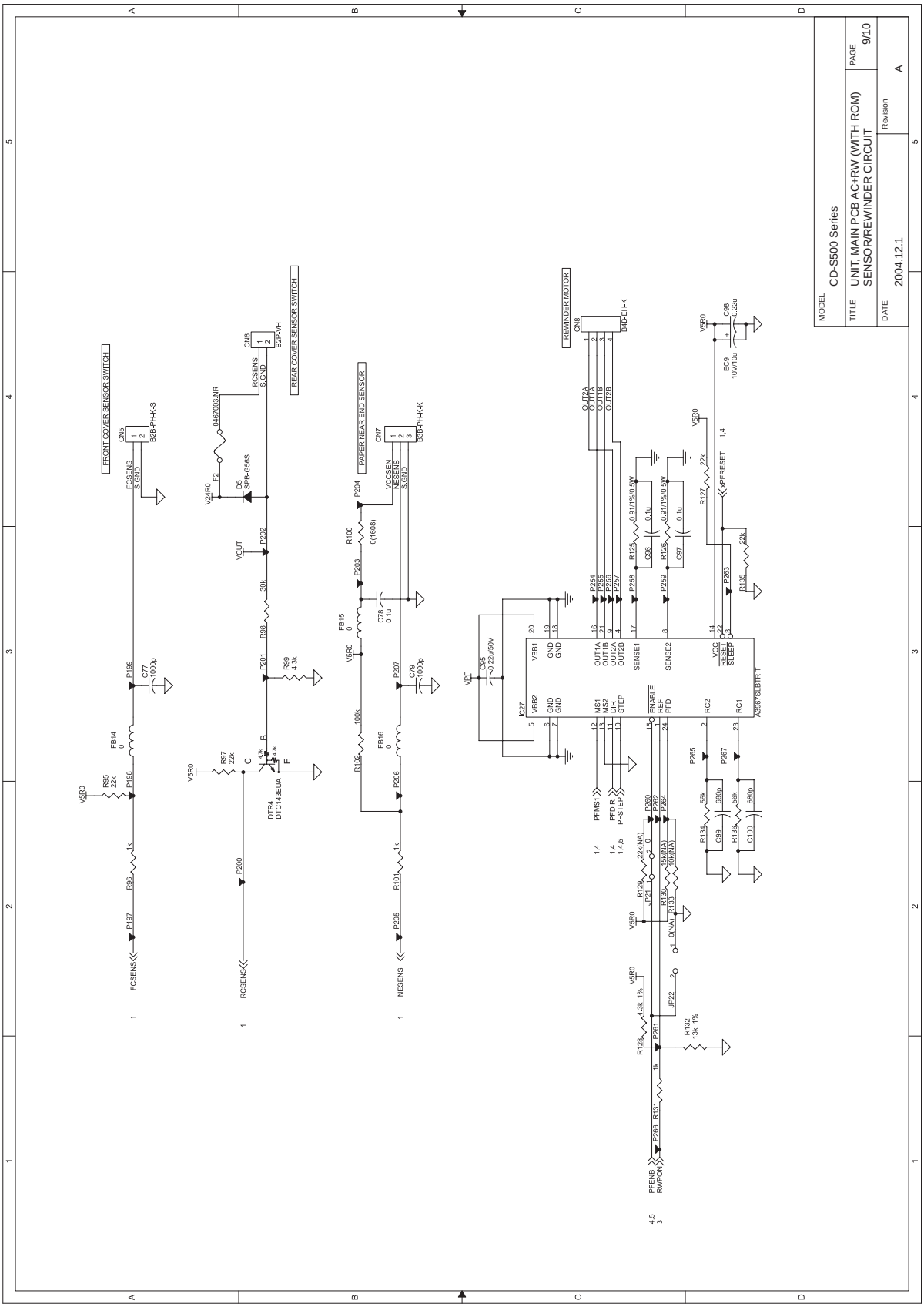
5-2-7 I/F CONNECTOR CIRCUIT



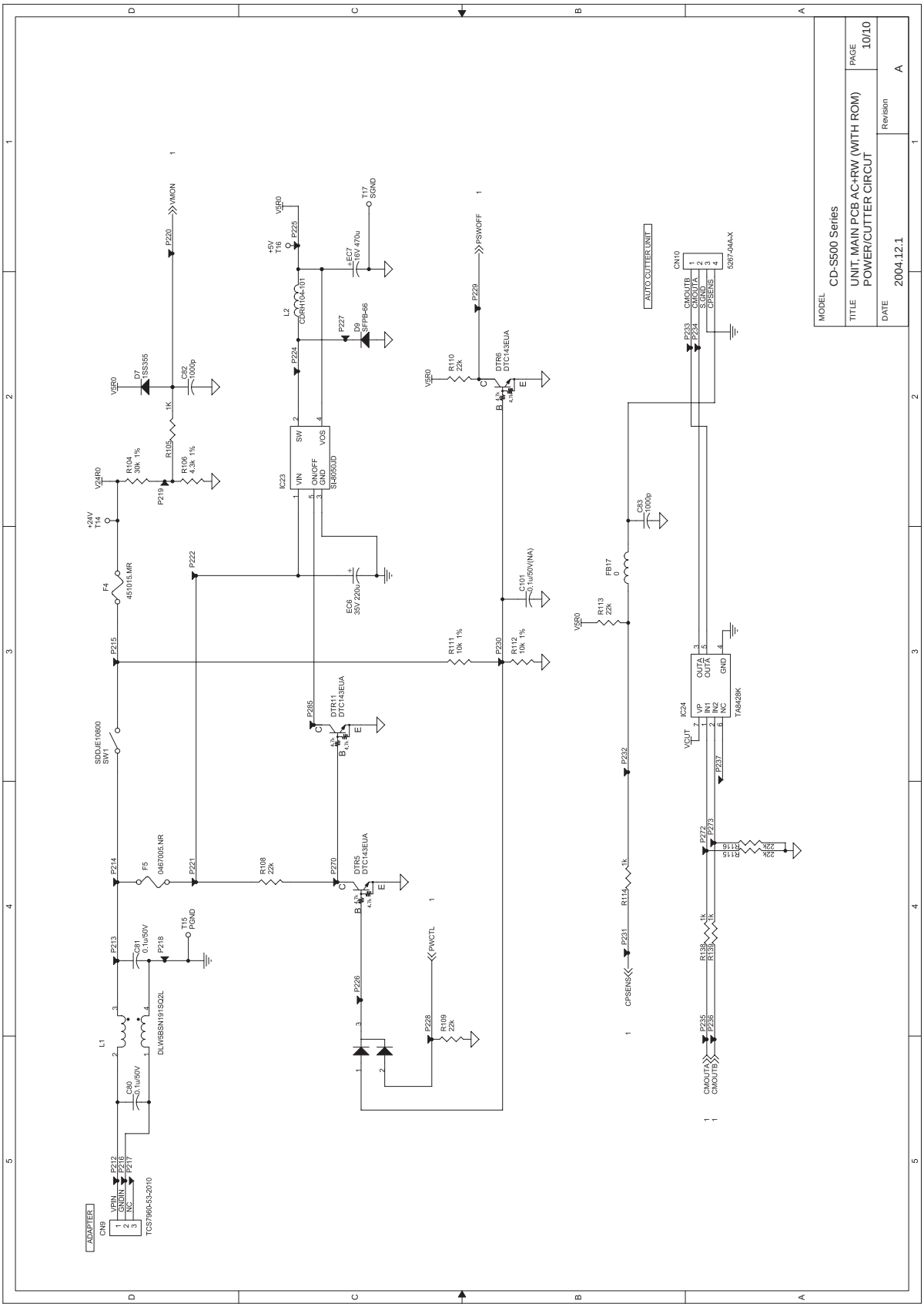
5-2-8 DRAWER/OPE-PANE/BUZZER CIRCUIT



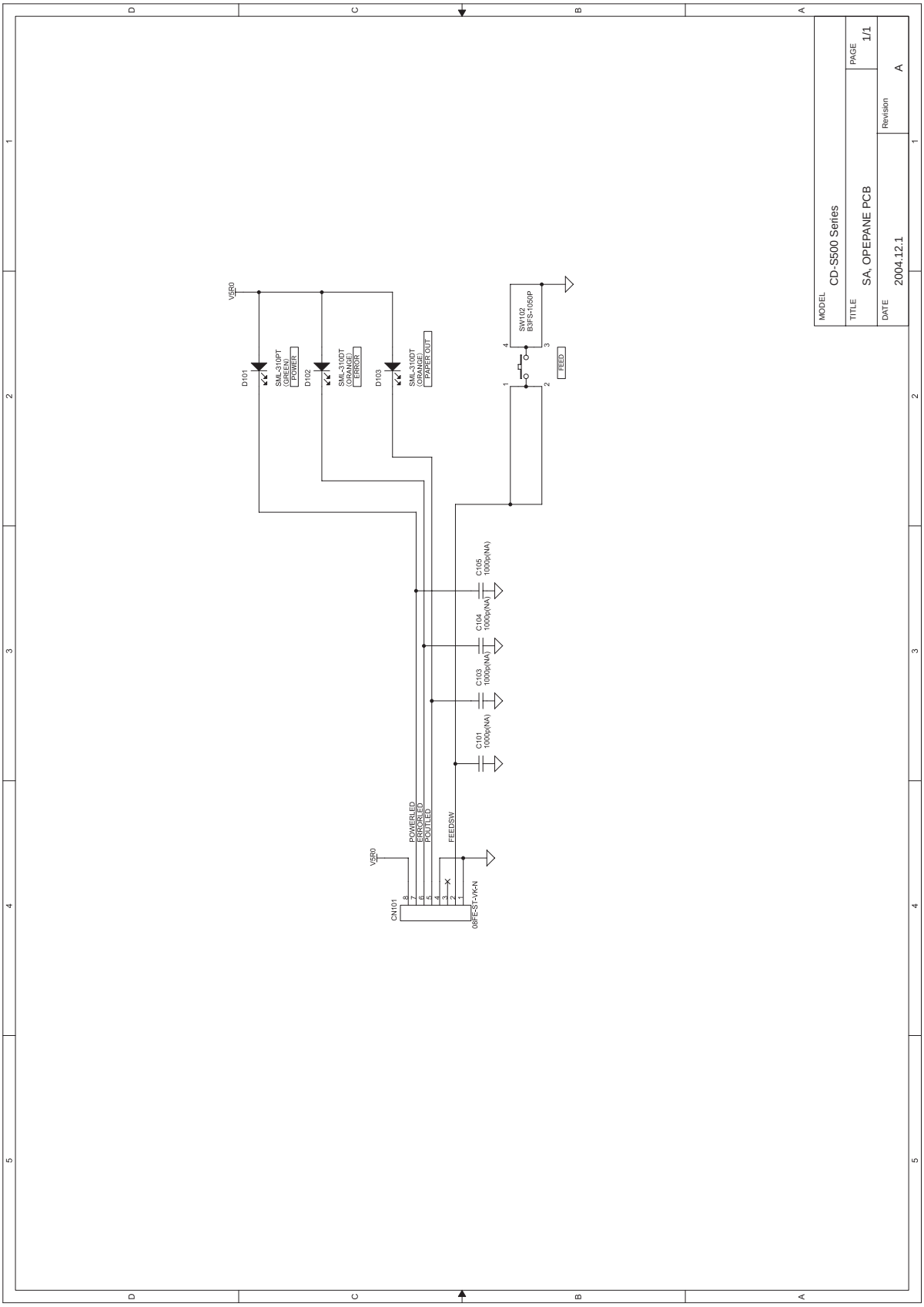
5-2-9 SENSOR/REWINDER CIRCUIT



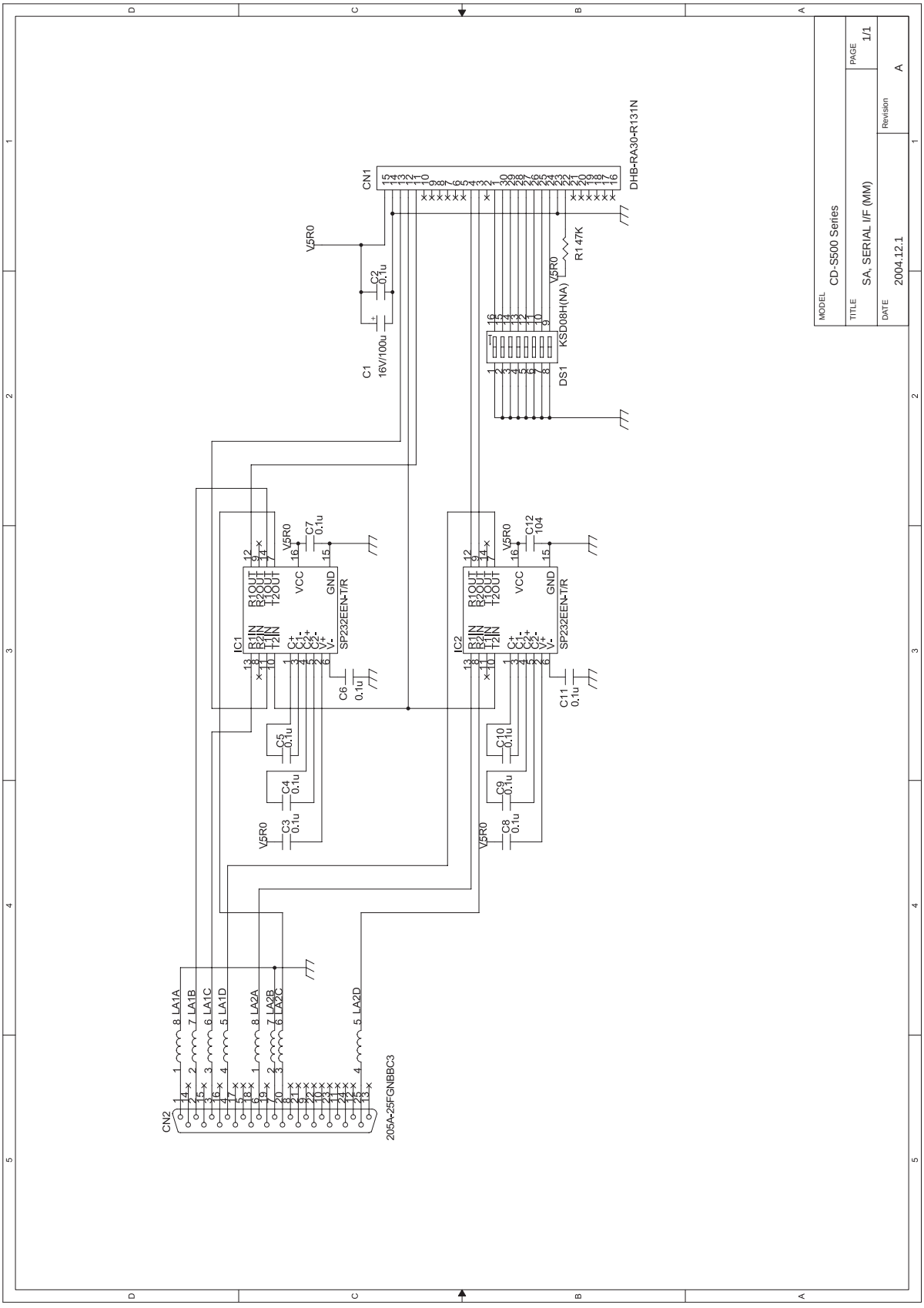
5-2-10 POWER/CUTTER CIRCUT



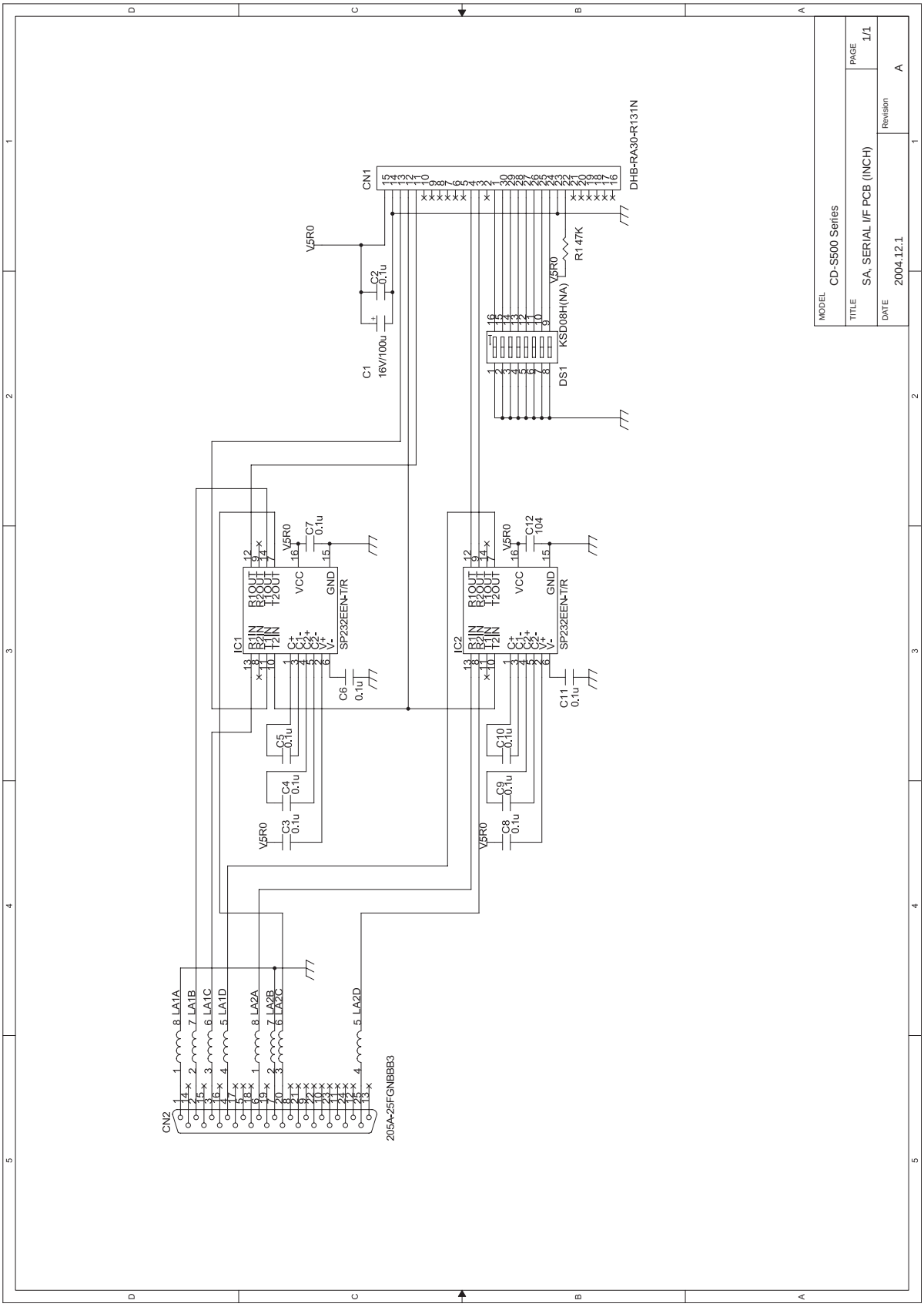
5-3 SA, OPE-PANE PCB



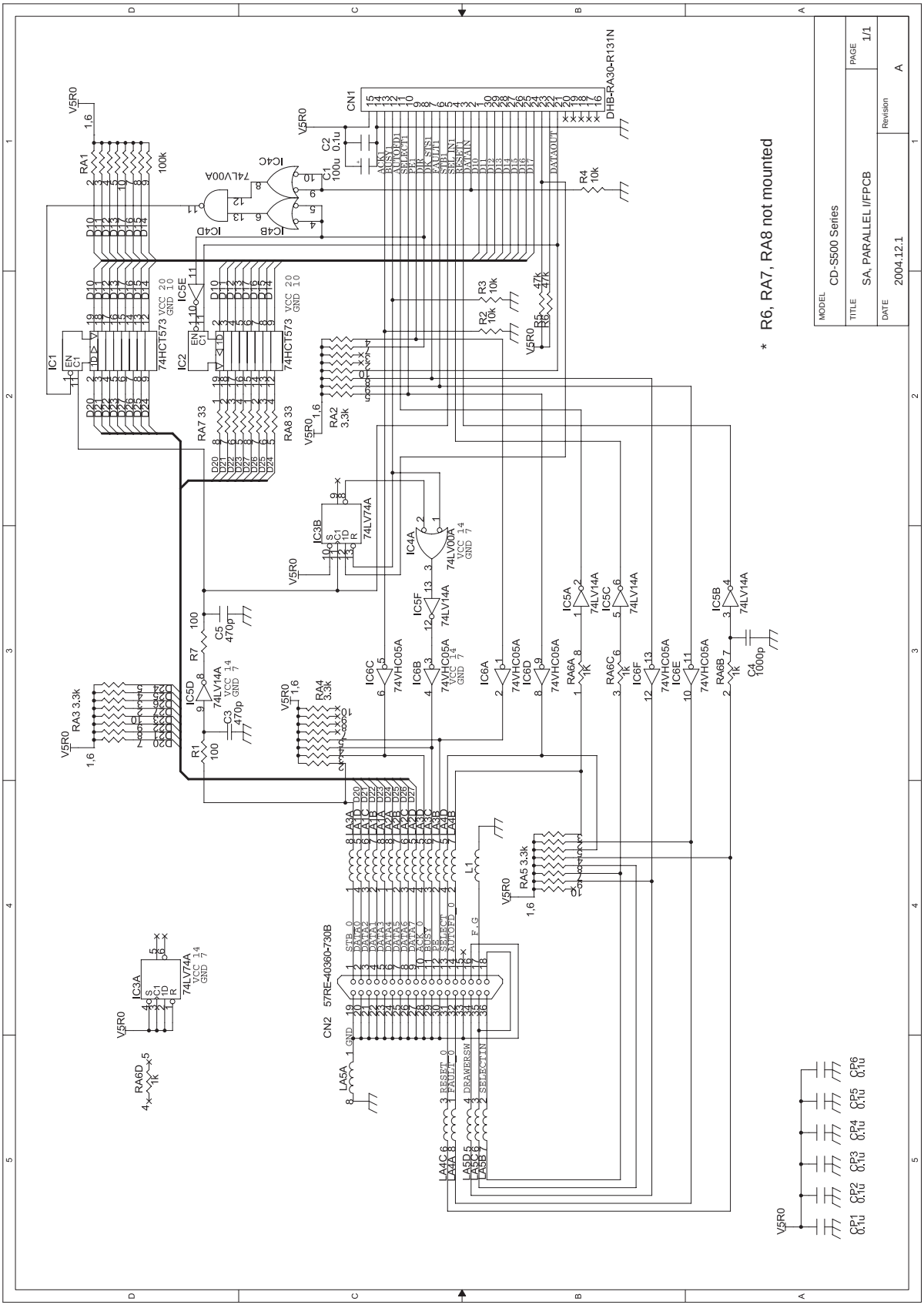
5-4 SA, SERIAL I/F PCB (MM)



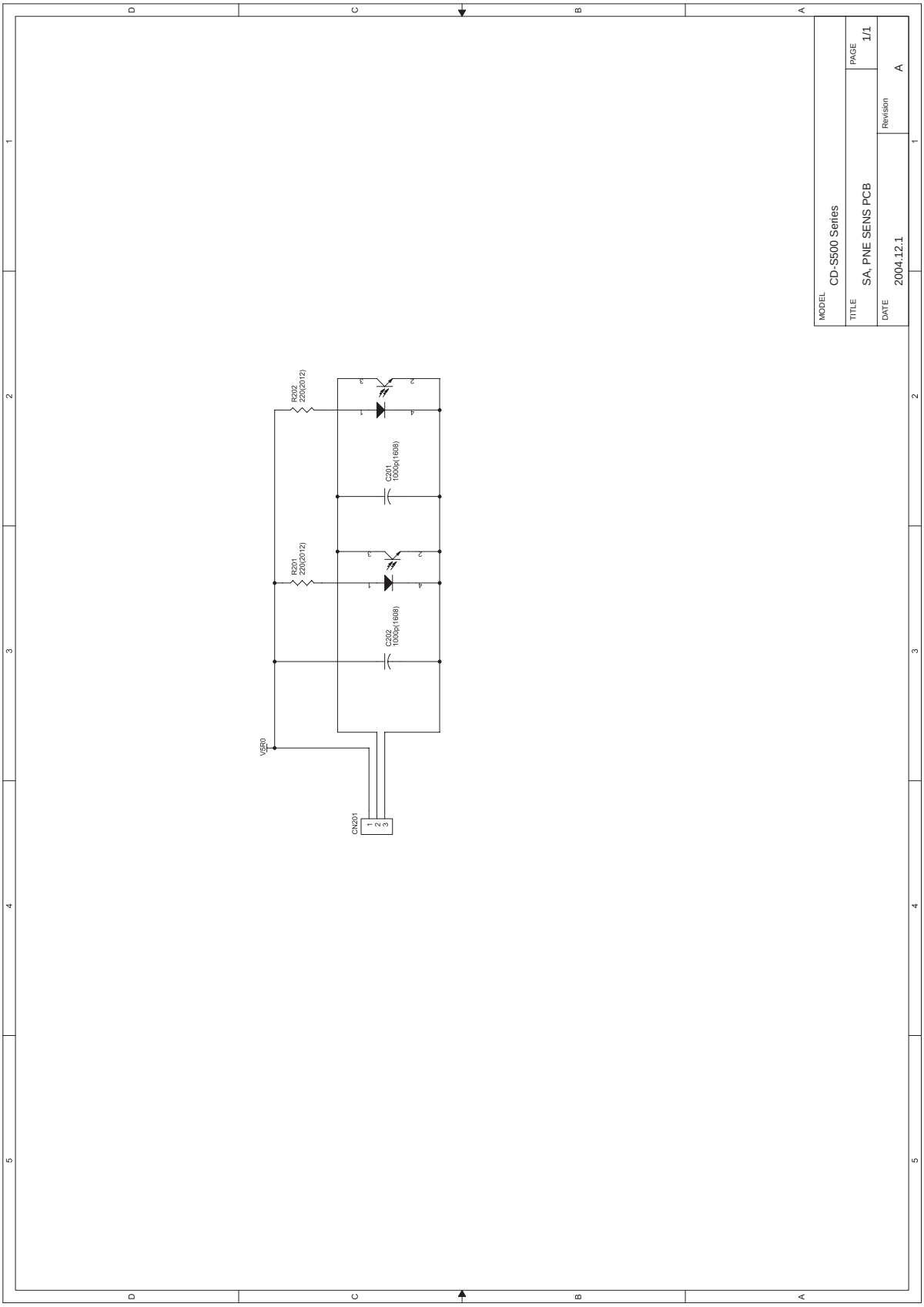
5-5 SA, SERIAL I/F PCB (INCH)



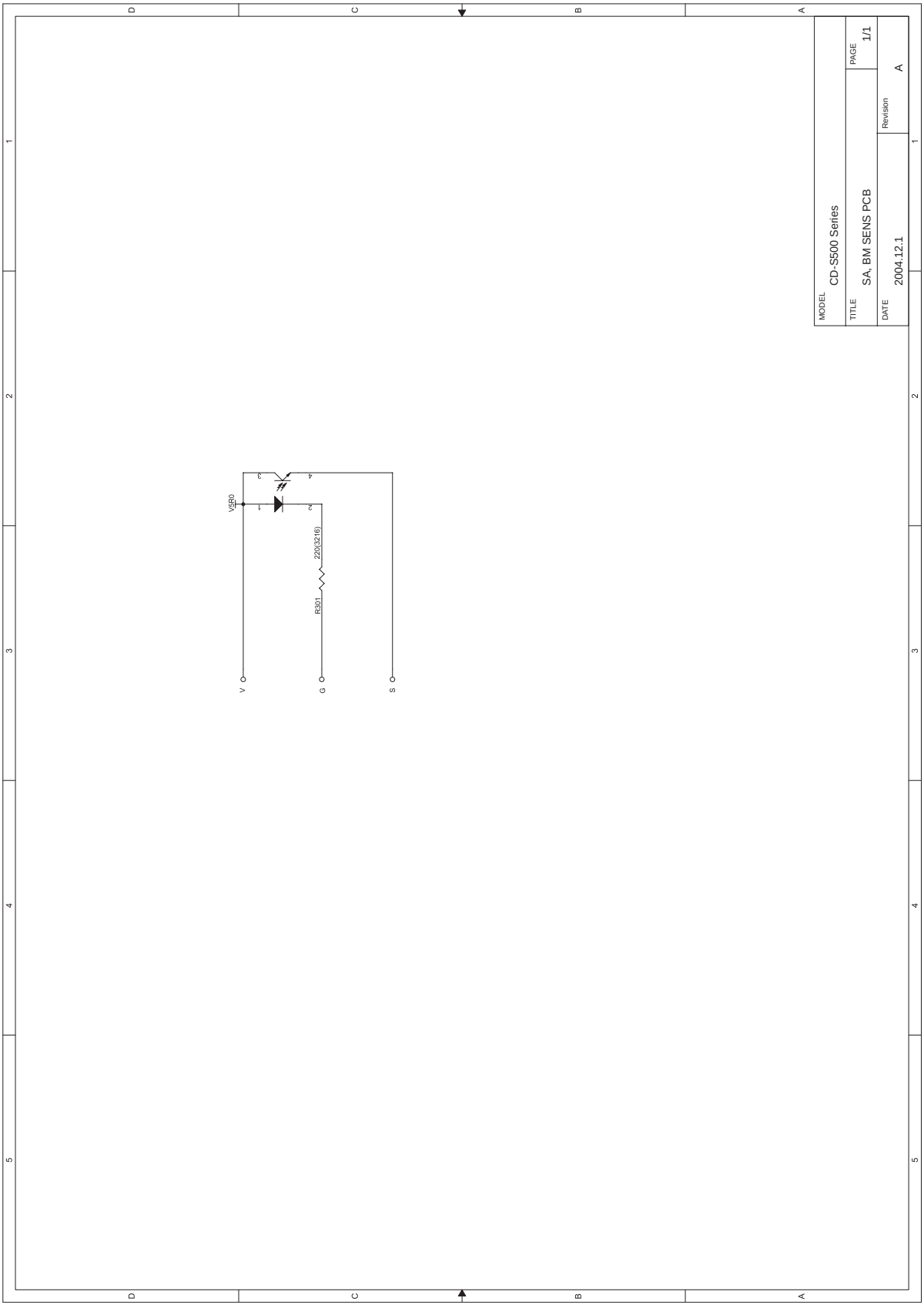
5-6 SA, PARALLEL I/F PCB



5-7 SA, PNE SENS PCB



5-8 SA, BM SENS PCB



Chapter 6

TROUBLESHOOTING

6-1 Troubleshooting List

	Symptom	Check	Action
1	Paper jam	Check for a jam at the paper ejection opening. If you cannot open the rear cover, make a check for 2.	Remove all the jammed paper. Remove the roll paper from the printer and put it back again.
2	Rear cover does not open	Check to see if the blade of the auto cutter is protruding.	Insert a Phillips screwdriver (+) into the cutter lock release feed hole on the printer and turn it clockwise or counter-clockwise. Rotate the screwdriver while watching the paper ejection opening and stop turning it when both ends of the blade are fully retracted. CAUITON Do not try to force the rear cover to open. If you do so, the printer will be damaged and you will be cut by the blade.
3	Ribbon is not fed correctly	Turn the knob on the ribbon cassette.	After turning the knob until the ribbon is fed smoothly, reset the ribbon cassette. If you cannot turn the knob, the ribbon may be jammed inside the cassette. If the situation does not improve, replace it with a new ribbon cassette.
4	The paper is not cut	Check to make sure that the rear cover and front cover are closed.	If either cover is open, close it.
5	Power cannot be turned on	Check to make sure that the power cord and AC adapter plug are correctly inserted.	Insert the power cord and AC adapter plug correctly.
		Check to make sure that the power is supplied to the outlet.	Supply the power to the outlet.
		Check the power cord for disconnection.	Replace the power cord.
6	Carriage operates but there is no print made	Check to make sure that the print head FPC is correctly inserted into the connector.	Insert the print head FPC correctly into the connector.
		Check the print head FPC for disconnection.	If disconnected, replace the print head.
7	Some printing pins do not print	Check to make sure that the FFC that connects between the print head, connector and main PCB is correctly inserted into the connector.	If the FFC is correctly inserted and the situation does not improve, replace the print head or the main PCB.
8	Print is generally too light	Check to see if ink on the ink ribbon is running out.	If ink is running out, replace the ink ribbon.
		Check the head gap. (If it is too wide, print will become lighter.)	Adjust the head gap.

	Symptom	Check	Action
9	Print is off the specified column position	Check to see if fibers of paper or ink ribbon are collected on the HP sensor or partition plate.	Remove fibers of paper or ink ribbon.
		Check to see if lubricant is present or dried up on the CR guide shaft and the carriage.	Supply lubricant to the CR guide shaft and the carriage.
		Check to see if the ink ribbon is caught in the print head.	If the ink ribbon is caught in the print head, replace the print head.
10	Carriage does not operate	Check to see if the carriage moves smoothly.	If the carriage does not move smoothly, replace the printing unit. If the carriage moves smoothly, replace the HP sensor PCB, CR motor and main PCB.
11	Printing stops suddenly	Check to see if the ink ribbon is caught in the print head.	Replace the print head.
12	Power is turned on but paper is not fed	Check to make sure that the PF motor is working.	Replace the PF motor and the main PCB.
13	Paper feed is unstable	Check the rubber roller on the PF shaft for contamination.	If contaminated, clean the rubber roller of the PF shaft with alcohol.
		Check to see if the ribbon mask is deformed.	If deformed, replace the ribbon mask.
		Check to make sure that the paper pressure plate correctly holds the paper.	If not, bend the paper pressure plate towards the paper.
		Check the head gap. (If the head gap is too narrow, paper feed may be unstable depending on the load in feeding.)	Adjust the head gap.
		Check to make sure that the rear cover sensor is correctly working.	Adjust the rear cover sensor position.
14	Auto cutter does not operate	Check that the auto cutter cable connector is correctly connected to the main PCB and that “Auto-Cutter OFF” is not selected for the menu.	If there is no problem in the connection and menu setting, replace the auto cutter.
15	Auto cutter does not cut well	Check to make sure that the auto cutter mounting screws are securely tightened.	Tighten the mounting screws.
		Check to make sure that the lower blade mounting screws are securely tightened.	Tighten the mounting screws.
		Check to see if the lower blade is worn out.	Replace the lower blade.
		Check to see if the lower blade fixing part is deformed.	If deformed, replace the part.
16	Rewinder does not operate	Check the rewinder motor operation.	If the rewinder motor does not operate, replace the rewinder motor and the main PCB.

	Symptom	Check	Action
17	Rewinder does not rewind the paper correctly	Check to see if the paper is set to the rewinder too loosely.	If too loose, tense it. Note that the paper should be set tightly at the beginning of rewinding.
		Check to see if the rewinder roller is worn out.	If worn out, replace the rewinder roller.

6-2 Clearing a Paper Jam

Clearing Method

1) Turn off the power and open the rear cover.

   <If the rear cover cannot be opened>

   When there is a cutter problem, the printer may stop with the cutter blade protruding so that pressing the FEED switch fails to clear the error. When this happens, restore the cutter blade manually by inserting a screwdriver into the hole on the left side of the rear cover and rotating it, then open the cover (the blade will be restored whether you turn it to the left or right).

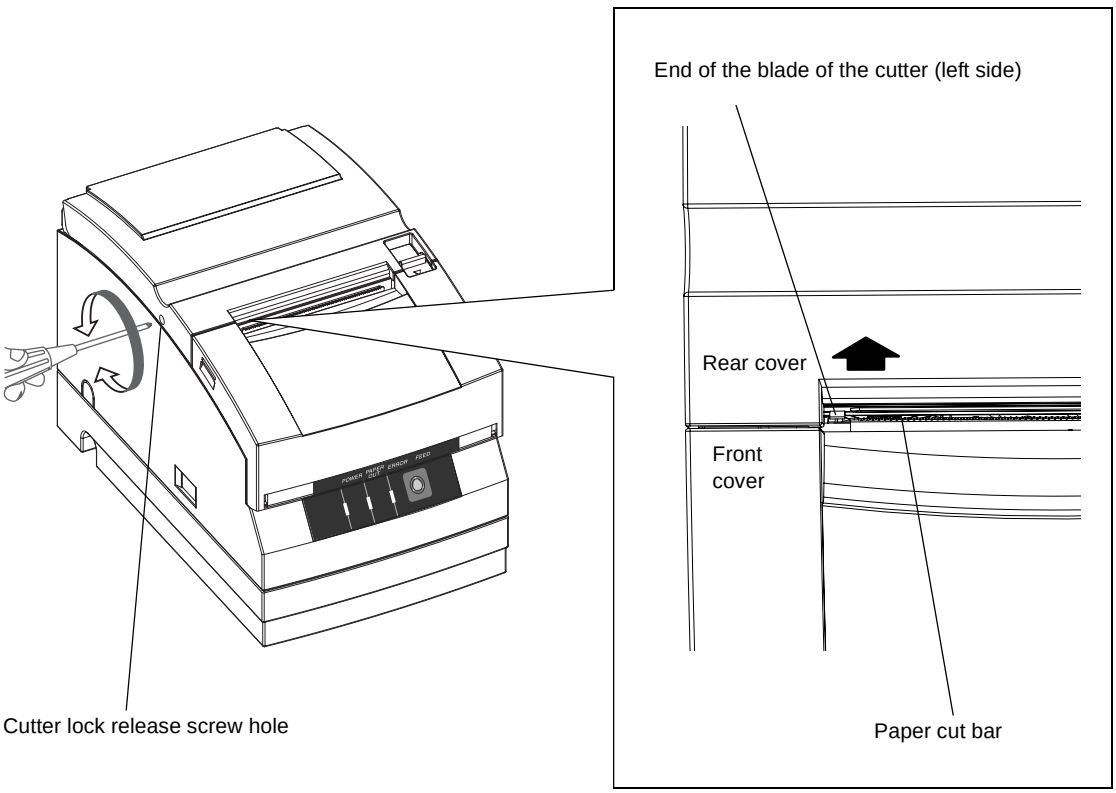
   * Turn the screwdriver until the projections on both ends of the blade of the cutter are returned to the back of the printer (direction shown by the arrow).

2) Remove all the jammed paper. (Temporarily remove the roll paper that is installed in the printer.)

3) Close the rear cover and turn on the power. The auto cutter operation will be initialized and the error will be cleared.

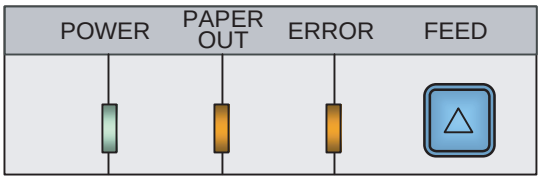
CAUTION

- When removing the jammed paper, be careful not to touch the area around the print head nor the cutter blade. If you do so, you will be burned or cut.



6-3 Operation Panel

6-3-1 Basic Display



LED

POWER (Green): It is lit when the power is supplied and is off when the power is off.

PAPER OUT (Orange): It is lit in paper-out status and is off when paper is loaded. (Hereinafter called “P.OUT”)

ERROR (Orange): It is lit when the rear cover is open and is off when the cover is closed.

Switch

	Status	Paper	Data	Function
FEED SW	Ready	Loaded	No data	When this switch is pressed once (less than 1 second), paper is fed by one line. When it is held down, paper is fed continuously until the switch is released.
		Loaded	Data exists	Invalid
		No paper	–	Invalid
	Error	–	–	Cancel of the error status.

6-4 Error Indication

Errors are indicated by a combination of POWER, P.OUT, and ERROR LEDs.

(Each ○ and ● represents 300 ms.)

	Type of Error	LED Indication		Operation and Restoration Method
(1)	Paper end	POWER P.OUT ERROR	○○○○ ○○○○ ●●●●	Printing stops and the printer goes offline. Replace the paper and close the cover to return the printer online. Paper end can be disabled by setting ESC c 4.
(2)	Paper near end	POWER P.OUT ERROR	○○○○ ○○●● ●●●●	When PAPER NEAREND of the soft switch is enabled, printing continues after PE, FAULT is output. When it is disabled, the LEDs keep flashing and printing continues to the paper end.
(3)	Rear/front cover open	POWER P.OUT ERROR	○○○○ Depends on the status ○○○○	During printing, printing is immediately stopped and the printer goes offline. Close the cover to return the printer online.
(4)	Head hot	POWER P.OUT ERROR	○○○○ Depends on the status ○○●●	Cooling starts. After the temperature has fallen, the printer is automatically restored and printing restarts.
(5)	HP abnormal	POWER P.OUT ERROR	○○●● ○○●● ○○●●	The printer goes offline. Remove the paper jam or other problem and press FEED switch to restore the printer. The printer returns to online status after initial operation.
(6)	Black mark abnormal	POWER P.OUT ERROR	○○●● ○○●● ●●○○	The printer goes offline. Remove the paper jam or other problem and press FEED switch to restore the printer. The printer returns to online status after initial operation.
(7)	Cutter abnormal position detection	POWER P.OUT ERROR	○○●● ●●○○ ●●○○	The printer goes offline. Remove the paper jam or other problem and press FEED switch to restore the printer. The printer returns to online status after initial operation.
(8)	Hardware abnormal RAM readwrite	POWER P.OUT ERROR	●●●● ●○●○ ●○●○	When the power is on, it means that a hardware error, such as RAM check, occurred. The printer goes offline, and then an error is indicated. Restoration impossible.
(9)	Hardware abnormal FROM write	POWER P.OUT ERROR	●●●● ○●○● ●○●○	FROM writing error. The printer goes offline, and then an error is indicated. Restoration impossible.
(10)	24V abnormal	POWER P.OUT ERROR	●●●● ●●●● ●○●○	24V voltage abnormal. The printer goes offline, and then an error is indicated. Restoration impossible.

○: Lit, ●: Off

* No RS232C communication error detection is performed.

Error Priority

(1) < (2) < (3) < (4) < (5) < (6) < (7) < (8) < (9) < (10)

Buzzer Sounding

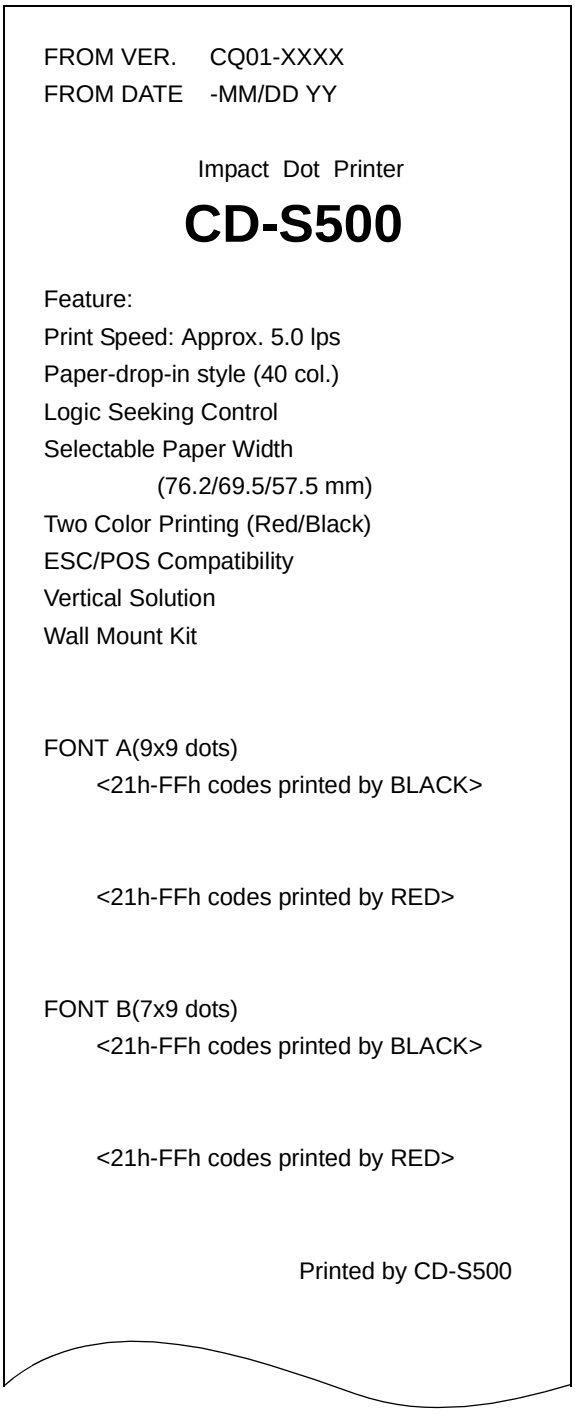
If the buzzer sounding is enabled by the soft switch:

- In the error status described in “6-4 Error Indication”, if one of the (4) - (8) errors occurs, the buzzer continues to sound until the error is cancelled.
- The buzzer sounds at the time of key operation in the software switch or the maintenance function (described later).

If the buzzer sounding is disabled by the soft switch, the buzzer does not sound on the conditions above.

6-5 Demonstration Printing Function

If FEED switch is held down while the printer is turned on with the front and rear covers closed, the demonstration printing mode is started. Then “demonstration patterns and the setting of the software switch” are printed. After completing the printing, the printer shifts to normal power-on status through POWER ON RESET operation.



FROM VER. CQ01-XXXX
FROM DATE -MM/DD YY

Impact Dot Printer

CD-S500

Feature:
Print Speed: Approx. 5.0 lps
Paper-drop-in style (40 col.)
Logic Seeking Control
Selectable Paper Width
(76.2/69.5/57.5 mm)
Two Color Printing (Red/Black)
ESC/POS Compatibility
Vertical Solution
Wall Mount Kit

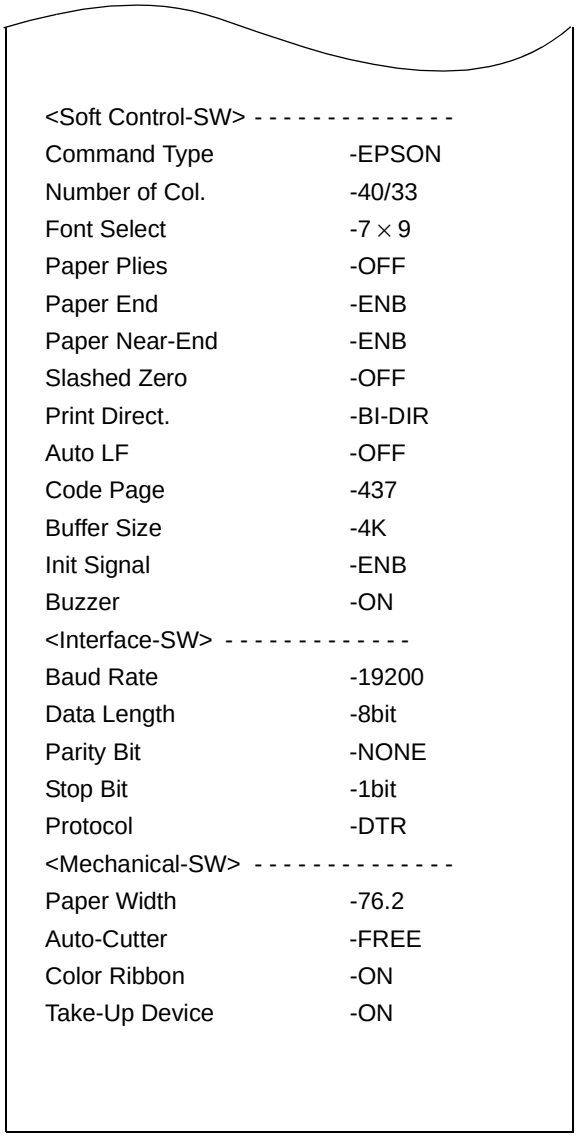
FONT A(9x9 dots)
<21h-FFh codes printed by BLACK>

<21h-FFh codes printed by RED>

FONT B(7x9 dots)
<21h-FFh codes printed by BLACK>

<21h-FFh codes printed by RED>

Printed by CD-S500



<Soft Control-SW> - - - - - - - - - - - - - -	
Command Type	-EPSON
Number of Col.	-40/33
Font Select	-7 × 9
Paper Plies	-OFF
Paper End	-ENB
Paper Near-End	-ENB
Slashed Zero	-OFF
Print Direct.	-BI-DIR
Auto LF	-OFF
Code Page	-437
Buffer Size	-4K
Init Signal	-ENB
Buzzer	-ON
<Interface-SW> - - - - - - - - - - - - - -	
Baud Rate	-19200
Data Length	-8bit
Parity Bit	-NONE
Stop Bit	-1bit
Protocol	-DTR
<Mechanical-SW> - - - - - - - - - - - - - -	
Paper Width	-76.2
Auto-Cutter	-FREE
Color Ribbon	-ON
Take-Up Device	-ON

6-6 Maintenance Function

If FEED switch is held down while the printer is turned on with the front cover opened and the rear cover closed, the maintenance mode is started.

Status: Offline

LED indication: POWER LED flashes at 0.3 second intervals(○●○●). P.OUT and ERROR LEDs are off.

In this status, close the front cover and select the function by pressing FEED switch the following number of times.

Types of maintenance function

(1) HEX dump mode

Pressing FEED switch 0 times. POWER LED flashes at 0.3 second intervals (○●○●). P.OUT and ERROR LEDs are off.

(2) Soft SW setting mode

Pressing FEED switch 1 time. POWER and P.OUT LEDs flash at 0.3 second intervals (○●○●). ERROR LED is off.

(3) Initial factory shipping mode

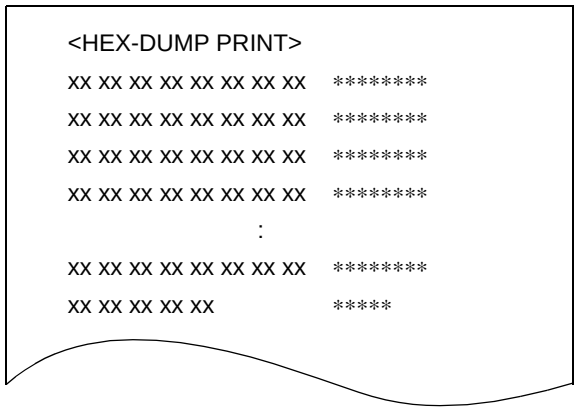
Pressing FEED switch 2 times. POWER, P.OUT and ERROR LEDs flash at 0.3 second intervals (○●○●).

(4) Cut position adjustment mode

Pressing FEED switch 3 times. POWER and ERROR LEDs flash at 0.3 second intervals (○●○●). P.OUT LED is off.

6-6-1 HEX Dump Mode

If the front cover is reopened and closed in maintenance mode (POWER LED is flashing), POWER LED stops flashing and remains lit, and the printer enters HEX dump mode. After printing the title, it stands by to receive data.



* To exit from HEX dump mode, the printer needs to be turned off.

* FEED switch works in the same manner as usual operation.

6-6-2 Soft SW Setting Mode

If the front cover is reopened and then closed while POWER and P.OUT LEDs are flashing, the soft SW setting mode is started. POWER and P.OUT LEDs stop flashing and remain lit. Then the title and top items are printed.

Operation Method

Pressing FEED switch (less than 2 seconds):

The setting is changed. The present set value is changed and the same item is reprinted.

(Press FEED switch, and when the buzzer sounds once, release it.)

Pressing FEED switch continuously (2 seconds or more):

Moves to the next item. It prints the present set value of the next item.

(Press FEED switch, and when the buzzer sounds three times, release it.)

Opening/closing the front cover:

After saving the set values to FROM, it reprints all items from the top and returns to normal poweron status through POWER ON RESET operation.

* FEED switch after the last item printing works in the same manner as opening the front cover.

<Soft-Switch Setting>
Press Feed
→ Change PARM.
Press Feed For 2S
→ Next Item
F.Cover Open/Close
→ Save & Exit

} Title printing

<Soft Control-SW> - - - - - - - - - - - - - - - - -		
Command Type	-EPSON	EPSON/STAR/CBM1/CBM2
Number of Col.	-40/33	40/33, 42/35
Font Select	-7 × 9	9×9/7×9
Paper Plies	-OFF	OFF/2P/3P
Paper End	-ENB	ENB/DIS
Paper Near-End	-ENB	ENB/DIS
Slashed Zero	-OFF	OFF/ON
Print Direct.	-BI-DIR	BI-DIR/UNI-DIR
Auto LF	-OFF	OFF/ON
Code Page	-437	437/850/860/863/865/852/866/857/858/WPC
Buffer Size	-4K	40/4K
Init Signal	-ENB	ENB/DIS (RS232C 25PIN and Parallel 31PIN)
Buzzer	-ON	ON/OFF
<Interface-SW> - - - - - - - - - - - - - - - - - -		
Baud Rate	-19200	1200/2400/4800/9600/19200
Data Length	-8bit	8bit/7bit
Parity Bit	-NONE	NONE/EVEN/ODD
Stop Bit	-1bit	1bit/2bit
Protocol	-DTR	DTR/XON-OFF
<Mechanical-SW> - - - - - - - - - - - - - - - - -		
Paper Width	-76.2	76.2/69.5/57.5
Auto-Cutter	-FREE	OFF/FREE/FULL/PAR.
Color Ribbon	-ON	OFF/ON
Take-Up Device	-ON	OFF/ON

* Changes are saved to FROM by opening and closing the front cover. After completion of saving, remaining items are printed.

  If the power is turned off before opening and closing the front cover, the setting change is invalid.

* If the paper runs out during the change, set the paper and close the rear cover to continue the process.

The items of <InterfaceSW> in the printing example above are printed only with printers equipped with an RS232C I/F PC board.

<Soft Control-SW>

Command Type

The emulation is selected from EPSON/STAR/CBM1/CBM2.

Initial value: EPSON

Number of Col.

The number of full dots in a full column is 200 dots.

Initial value: 40/33

Number of Col.	Font Select	Space between Characters	Printing Line Columns	Full Columns (when including half dot)
40/33	9 × 9 dots	3 dots	33 columns	200 dots (400)
	7 × 9 dots	3 dots	40 columns	
42/35	9 × 9 dots	2 dots	35 columns	193 dots (386)
	7 × 9 dots	2 dots	42 columns	

* By the change of line columns from 40/33 to 42/35 or vice versa, the space between characters and the mechanical right margin are changed.

Font Select

The initial font size is selected immediately after the power is turned on.

Initial value: 7 × 9

Paper Plies

Copy mode is selected. OFF/2P/3P can be selected. But when 3P is set, the printing speed is low.

Initial value: OFF

Paper End

Sets PE signal at the time of paper end to “enabled” or “disabled”. This setting is effective only for the Centronics interface.

When it is enabled, BUSY, PE, and FAULT are output and printing stops at paper end.

When it is disabled, only BUSY is output and printing stops at paper end.

Initial value: ENB

Paper Near-End

Sets PE signal at the time of paper near end to “enabled” or “disabled”. This setting is effective only for the Centronics interface.

When it is enabled, PE and FAULT are output and printing continues.

When it is disabled, nothing is output and printing continues.

Initial value: ENB

Slashed Zero

It sets whether or not slash is used with the numeral 0 (ZERO).

Initial value: OFF

Print Direct.

Designates the printing direction. When BIDIR is selected, printing starts from the left or right ends of the next printing line which is closer to the location where the previous print has stopped.

When UNI-DIR is selected, printing always starts from the left end.

Initial value: BI-DIR

Auto LF

The LF operation at the time of “CR” is selected. When it is OFF, only CR is operated. When it is ON, both CR and LF are operated.

Initial value: OFF

Code Page

The code page is selected. Types of code page: 437/850/860/863/865/852/866/857/858/WPC

Initial value: 437

Buffer Size

The receiving buffer size is selected from 40 or 4K bytes.

Initial value: 4 K

Init Signal

Selects either “enabled” (ENB) or “disabled” (DIS) of the printer initializing signal (PRIME) when a Centronics interface is used.

Selects either “enabled” (ENB) or “disabled” (DIS) of the 25 pin reset signal when a serial interface is used.

Initial value: ENB

Buzzer

Selects either “enabled” (ON) or “disabled” (OFF) of the buzzer sound when an abnormality occurs.

Initial value: ON

<Interface -SW>

Baud Rate

Initial value: 19200

Data Length

Initial value: 8 bits

Parity Bit

Initial value: NONE

Stop Bit

Initial value: 1 bit

Protocol

These settings are for printers with the serial interface and displayed only when the serial board is mounted. The above 5 items of InterfaceSW are printed only with printers equipped with an RS232C I/F PC board.

Initial value: DTR

<Mechanical-SW>

Paper Width

Selects the paper size.

Initial value: According to the setting of internal maintenance function.

Auto-Cutter

Selects the cutter operation from OFF, FREE, FULL or PAR.

When it is OFF, cutting cannot be operated by FULL or PAR. command.

In FREE status, full cut or partial cat is operated according to FULL or PAR. command, respectively.

In FULL status, full cut is always performed by either FULL or PAR. command.

In PAR. status, partial cut is always performed by either FULL or PAR. command.

Initial value: According to the setting of internal maintenance function.

Color Ribbon

Selects the color function from ON or OFF. While it is OFF, the color changing command is ignored.

Initial value: According to the setting of internal maintenance function.

Take-Up Device

Selects the rewinder function from ON or OFF. While it is OFF, the rewinder motor does not operate.

Initial value: According to the setting of internal maintenance function.

Concerning MechanicalSW Operation

Functions that are not supported by the specifications at time of shipping have no impact on printer operations even when the settings are changed.

Example: Changes in the auto cutter setting for models that are not equipped with an auto cutter.

Changes in the TakeUp Device setting for models that are not equipped with a rewinder.

6-6-3 Initial Factory Shipping Mode

While POWER, P.OUT, and ERROR LEDs are flashing, reopen and then close the front cover to set the printer to initial factory shipping mode. When the mode has changed, the three LEDs are lit. Then, press FEED switch for three seconds or longer to restore the FROM setting to the factory default. After confirming that FEED switch is released, the printer goes to normal power-on status through POWER ON RESET operation.

6-6-4 Cut Position Adjustment Mode

While POWER and ERROR LEDs are flashing, reopen and then close the front cover to set the printer to cut position adjustment mode. When the mode has changed, POWER and ERROR LEDs are lit.

When the printer enters cut position adjustment mode, it prints the present adjustment values and stands by for the next key operation.

Operation Method

Pressing FEED switch (for less than 2 seconds):

The adjustment value is changed by ±1/144 inch.

Opening and closing the front cover:

+/– of the adjustment direction is changed.

When the printer enters the adjustment mode, the value changes in + direction. The direction is changed by opening and closing the front cover.

Pressing FEED switch continuously (for 2 seconds or more):

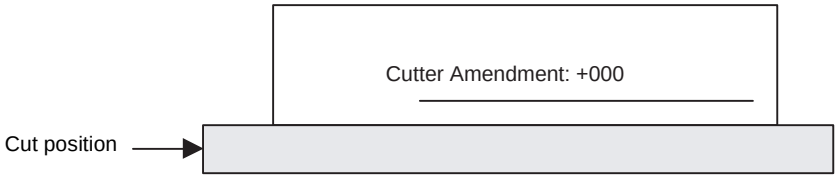
After the present value is saved to FROM, the printer goes to normal power-on status through POWER ON RESET operation.

Adjustment range:

–035 to +035

Initial value:

+000



6-7 Maintenance Function for Service

Under the condition that the front and rear covers are open, hold down FEED switch while turning on the printer to activate maintenance mode for service.

Status: Offline

LED indication: POWER LED flashes at 0.3 second intervals (○●○●). P.OUT and ERROR LEDs are off.

In this state, load paper and close the front and rear covers. Then, select the function by pressing FEED switch the following number of times.

Types of the maintenance functions for service

(1) Busy condition check mode

Pressing FEED switch 0 times: POWER LED flashes at 0.3 second intervals (○●○●). P.OUT and ERROR LEDs are off.

(2) ROM rewrite receiving mode

Pressing FEED switch 1 time: POWER and P.OUT LEDs flash at 0.3 second intervals (○●○●). ERROR LED is off.

(3) ROM rewrite sending mode

Press FEED switch 2 times: POWER, P.OUT, and ERROR LEDs flash at 0.3 second intervals (○●○●).

(4) Printing column misalignment adjustment mode

Pressing FEED switch 3 times: POWER and ERROR LEDs flash at 0.3 second intervals (○●○●). P.OUT LED is off.

(5) Drawer check mode

Pressing FEED switch 4 times: POWER and P.OUT LEDs are on and ERROR LED is off.

(6) Maintenance sending/receiving mode

Pressing FEED switch 5 times: POWER, P.OUT and ERROR LEDs flash alternately.

6-7-1 Busy Condition Check Mode

If the front cover is opened and then closed while POWER LED is flashing, POWER LED stops flashing and remains lit. After printing from the busy condition to the PAPER WIDTH setting, the printer stands by for the next key operation.

Operation Method

Pressing FEED switch (less than 2 seconds):

The setting is changed. The present set value is changed and the same item is reprinted.

(Press FEED switch, and when the buzzer sounds once, release it.)

Pressing FEED switch continuously (2 seconds or more):

Moves to the next item. It prints the present set value of the next item.

(Press FEED switch, and when the buzzer sounds three times, release it.)

Opening/Closing the front cover:

The setting value is saved to FROM. When “INITIALIZED” is set to YES, the item value and the software switch setting is initialized, and then the following cutting operation is executed. After that, the printer goes to the normal power-on status through POWER ON RESET operation.

<Cutting operation>

The partial cut is executed at the current position and the paper feeds for 1 inch. Then, full cut is executed.

* FEED switch after the last item printing works in the same manner as opening the front cover.

<Ment. Information>			
FROM VER.	-DP01-0000		FROM version printing
FROM DATE	-MM.DD.YY		
BOOT DATE	-MM.DD.YY		
BK MARK	- XXXX	Crt.	Black Mark Adjustment value
Air Temp.	- XXXX	Crt.	Adjustment value of the current inside body temperature
Head Temp.	- XXXX	Crt.	Adjustment value of the current head temperature
Head Temp.	- XXXX	Max.	Maximum detection temperature
Head1	-XXXXXXXXX	Dot	Total number of printing dots of 1PIN
Head2	-XXXXXXXXX	Dot	Total number of printing dots of 2PIN
Head3	-XXXXXXXXX	Dot	Total number of printing dots of 3PIN
Head4	-XXXXXXXXX	Dot	Total number of printing dots of 4PIN
Head5	-XXXXXXXXX	Dot	Total number of printing dots of 5PIN
Head6	-XXXXXXXXX	Dot	Total number of printing dots of 6PIN
Head7	-XXXXXXXXX	Dot	Total number of printing dots of 7PIN
Head8	-XXXXXXXXX	Dot	Total number of printing dots of 8PIN
Head9	-XXXXXXXXX	Dot	Total number of printing dots of 9PIN
Feed	-XXXXXXXXX	Stp	Number of running steps (by 24/144 unit)
Cutter	-XXXXXXXXX	Cut	Number of cutting times
Paper Width	-76.2		76.2/69.5/57.5
Auto-Cutter	-ON		OFF/ON (Cutter: Equipped/Not equipped)
Color Ribbon	-ON		OFF/ON (Color control: Valid/Invalid)
Take-Up Device	-ON		OFF/ON (Rewinder control: Valid/Invalid)
Black Mark	-OFF		OFF/TOP/ BTM.F/BTM.R (Mark sensor: Valid/Invalid)
Head Initialize	-NO		NO/YES (Reset of the total dot number of head pin: Operated/Not operated)
Feed Initialize	-NO		NO/YES (Reset of the number of running steps: Operated/Not operated)
Cut Initialize	-NO		NO/YES (Reset of the number of cutter cutting times: Operated/Not operated)
Power ON Info.	-NO		NO/YES (Initial response at the time of start-up [3B, 31, 00] Operated/Not operated)

* The total number of dots and running steps are read out from FROM to RAM when the printer turns on and renewed at the time of printing or paper feed. When the printer is off, or if no data is received for 3 minutes or longer, the values are saved in FROM. At the time of saving, if the status is ONLINE, it becomes OFFLINE during data writing. For the following 6 items, equipped functions vary depending on customers (factory option).
* The settings are adjusted before delivery at factory according to the required functions. These settings are saved as the factory default and used as default when user initializes the printer (returns the setting to the factory default).
  (1) Paper Width
  (2) Auto-Cutter
  (3) Color Ribbon
  (4) Take-Up Device
  (5) Black Mark
  (6) Power ON Info.

Note: If this mode is closed by opening and closing the cover, the setting of the software switch will be initialized.

6-7-2 ROM Rewrite Receiving Mode

If the front cover is opened and then closed while POWER and P.OUT LEDs are flashing, both LEDs stop flashing and remain lit and the printer goes to the receive wait state. During data receiving, POWER LED is lit and P.OUT LED flashes. When the data receiving is completed, P.OUT LED stops flashing and remains lit.

After ROM rewriting, only POWER switch is effective and no other function is accepted.

6-7-3 ROM Rewrite Sending Mode

If the front cover is opened and then closed while POWER, P.OUT, and ERROR LEDs are flashing, all the LEDs stop flashing and remain lit, and the printer starts sending data. During data sending, POWER and ERROR LEDs are lit and P.OUT LED flashes. When the data sending is completed, the printer returns to the start-up state (POWER, P.OUT, and ERROR LEDs flash).

6-7-4 Printing Column Misalignment Adjustment Mode

If the front cover is opened and then closed while POWER and ERROR LEDs are flashing, the both LEDs stop flashing and remain lit and the printer moves to printing column misalignment adjustment mode.

When the printer enters this mode, it prints the current setting values and the character "H" in full columns for 5 lines in bi-directions. Then it feeds the paper until the whole printing can be seen and stands by for the next key operation.

Operation Method

Pressing FEED switch (less then 2 seconds):

The printing position moves to the right/left by 20 µs.

Opening/Closing the front cover:

The moving direction of right/left is changed.

When the printer goes to this mode, the moving direction is set to right. By opening and then closing the front cover, the moving direction is changed.

Pressing FEED switch continuously (for 2 seconds or more):

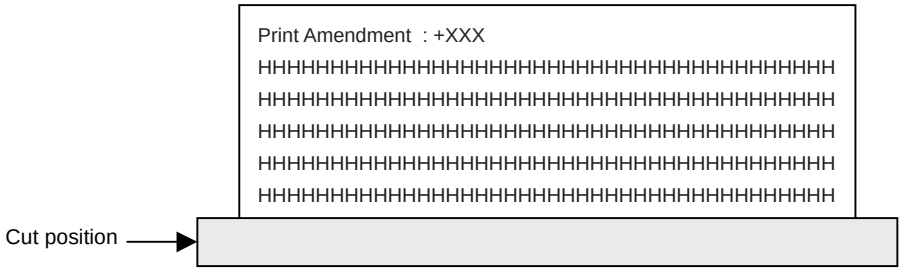
After the present value is saved to FROM, the printer goes to normal power-on status through POWER ON RESET operation.

Adjustable range:

–600 µs to +600 µs

Initial value:

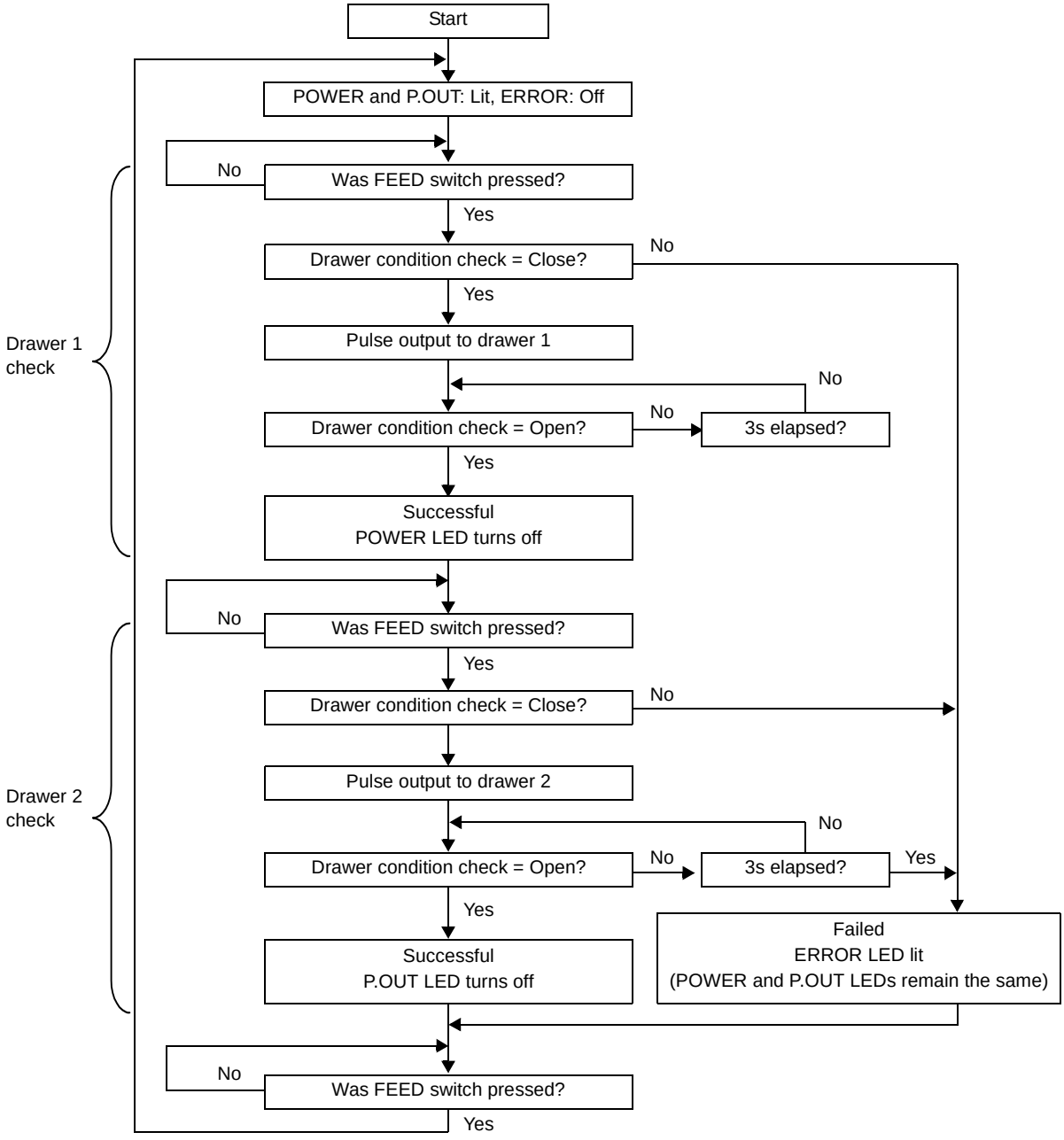
000 µs



6-7-5 Drawer Check Mode

If the front cover is opened and then closed while P.OUT LED is flashing, POWER and P.OUT LEDs stop flashing and remain lit and the printer goes to drawer check mode.

Check Item and Operation Method



6-7-6 Maintenance Sending/Receiving Mode

If the front cover is opened and then closed while POWER, P.OUT and ERROR LEDs flash alternately, the printer goes to maintenance sending/receiving mode.

By using the maintenance application for CDñS500, it is possible to read/write the internal setting.

The mode ends through power-off.